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gcgccaccgc ggcttgcatg ctggttggct gtcttgggac gatcccgaaa tagtccacgc 120
ggatctggtg attttgcggg ctacccgcga ttaccccgcg cggctcgacg agttttggc 180
ctggactacc cgcgtggcca atctgctgaa ctcgcggccg gtggtggcct ggaatgtcca 240
cgccgttcac ctacgtgacc ttgatgggat ccggggggt 278

<210> 4
<211> 1280
<212> DNA
<213> Mycobacterium bovis

<400> 4
ccgacccaga cactgaccgg gcgaccgctg atcggcaacg gcaccccccgg ggcggtcggc 60
agcggggcca ccggggcccc cggtgggtgg ctgctcggcg acggcggggc cggcgggtcc 120
ggcgcggcgg gctcgggcgc gcccggcggg gcgggcgggg ctgccgggct gtggggtacc 180
ggcggggccg gcgggatcgg cggagccagc accgtactcg gcggcaccgg cggggggaggc 240
ggggtcggtg ggctgtgggg cgccggtggg gccggcgggg ccggtggaac cggccttgtt 300
ggtggcgacg gcggggccgg tggggccggc gggaccggcg gactgctggc cgggctgatc 360
ggtgccggcg gaggtcacgg cgggaccggc gggctcagca ctaatggcga cggcggggtt 420
ggcggggccg gcgggaatgc cggaatgctc gccgggccgg gcggcgccgg cggagccggc 480
ggtgacggcg aaaacctgga caccggtggg gacggcgggg ccggcggtag cgcagggctg 540
ctgttcggca gcggcggcgc cggcggcgcc ggcggatttg gtttcctcgg tggggacggc 600
ggggccggtg gcaacgccgg gctgctgttg tccagcggcg gggccggcgg gttcggcggg 660
ttcggcaccg ccggtggggt cggtggggcc ggcggcaatg ccggctggct gggcttcggc 720
ggggccgggg gcatcggcgg aatcggcggt aacgctaacg ggggcgccgg tgggaacggc 780
ggcaccggcg gtcagttatg gggtagcggc ggcgccggcg tcgaaggcgg cgcagcctta 840
agcgtcggcg acaccggcgg ggccggtggc gtcggcggca gcgccgggct gatcggcacc 900
ggcggcaacg gcggcaacgg cggcaccggc gccaacgccg gcagccccgg aaccggcggc 960
gccggcgggt tgctgctggg ccaaaacggg ctcaacgggt tgccgtagcc gggcggcacg 1020
gcatggcttc cgggcgtcaa ccactcgccg gtgatgcaga tcggctgcgg agcgggccgc 1080
caaaatgggg gccgccgcgc caggtatctc ggcgaagatc cccggcgctc gagcgctttg 1140
tcagaggccc gtcgcgggtc gtcgtgacga cggctatccg ggcggtgcgg gtttcgcggc 1200
gcgccctgtg cccggcaccg ccgcccgttt gtcggcaacg ccgccgcgac ccgtgagccg 1260
tccagcagct ggcgcctgcg 1280

<210> 5
<211> 127
<212> DNA
<213> Mycobacterium bovis

<400> 5
gggcatcggc ggaatcggcg gtaacgctaa cgggggcgcc ggtgggaacg gcggcaccgg 60
cggtcagtta tggggtagcg gcggcgccgg cgtcgaaggc ggcgcagcct taagcgtcgg 120
cgacacc 127

<210> 6
<211> 434
<212> DNA
<213> Mycobacterium tuberculosis

<400> 6
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aatactcaag cttgcccagc cgtcgatgac aagaaatatg tccgcaaaag actcagcggc 60
cgactttgct cgcagctggc ggtaccgcgc caccgattct atgccgtggt cgcggaaaaa 120
tgcctcccga aatcgcacgg ccgactccag ttcggcgagc atccgcgatg ccagctgcgg 180
ctgcgccctg ccggccacgg cacccacatg cggcagttcg tccacctggg ccagcgcccc 240
gccgccgaat tccaaacaat agaactgcac ccggcccgca tcgtgggtaa cagccaacgc 300
catgatcagc gtccgcagcg cggttgactt gcccgtttgc ggtgcaccta cgaacgcgac 360
attgcctgcg gccccggaca agtcgatcgt gcgcggcacc cgtgactgct ctaacgggcg 420
attgaaattc cgat                                                 434
```

<210> 7
<211> 332
<212> DNA
<213> Mycobacterium tuberculosis

<400> 7
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ccacccgtgt aatttgggat gggcaaaaag gcgaagcacc gcgtggccac gaacgccggg 60
agggacaatc tcgggcggtt agggcttctc gcgggaaggc ccgaacgtac ggcgtttcaa 120
cacctcgcgt cgccctccga ccgcgaacat tcggggatgg cagcaacctg ctggcaccct 180
ggccgggcga tgatctgcag cgtcgccgcg ggtagtcgcc gcccgggcgg ctacactctg 240
aaacgcgatg accatcgatg tgtggatgca gcatcccgac gcaacggttc ctacaccgcg 300
atatgttcgc ctcgctgccc cggtggaccg gt                             332
```

<210> 8
<211> 354
<212> DNA
<213> Mycobacterium tuberculosis

<400> 8
```
aatactcaag ctttccgccg atacccgcca tgtcgcgcac atccaggact tctgggggga 60
tccgctgaca gcggcgggat cccaaagtgc ggatgatcgg gccgcctacg tcgtggtgta 120
cctcgtcggt aacaacgaaa ccgaagcgta tgactcggtc cacgcggtgc ggcacatggt 180
ggacaccaca ccgccaccgc acggggtgaa ggcctatgtc accggtccgg cagcactcaa 240
tgccgaccag gccgagggcg gagacaaaag tatcgctaag gtcaccgcga tcaccaacat 300
ggtgatcgca gcaatgttgc tagtgatcta tcgctccgta attaccgcgg ttct       354
```

<210> 9
<211> 353
<212> DNA
<213> Mycobacterium tuberculosis

<400> 9
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gtgccgttcc aacccgaatt ggctttcggc gccatcggtg aggacggcgt gcgggtgctc 60
aacgacgacg tcgtccgcgg gacacacctc gatgctgccg ccatggacgc ggtcgaacgc 120
aagcagctga tcgagctaca acgccgcgcg gaacgcttcc gccgcgggcg tgaccgcatc 180
ccgttgaccg ggcggatcgc ggtgatcgtc gatgacggca tcgccaccgg agcgacggcc 240
aaggcggcgt gccaggtcgc ccgggcgcac ggtgcggaca aggtggtgct ggcggtcccg 300
atcggcccag acgacatcgt ggcgagattc gccgggtacg ccgatgaggt ggt        353
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<210> 10
<211> 279
<212> DNA
<213> Mycobacterium tuberculosis

<400> 10
aatactcaag ctttcggcgg aaacggacac attgcgaata ttgatgacaa aataaaaatc 60
attgatggtt tgagtcacca ggccgatcaa gccttcgccg agccaaattc caatcaagag 120
gcccaagccc gtaccaatca gcccggcaac gagggattcc gtcattatca gccaaaataa 180
ctgctctcgg gttacaccca aacagcgcaa tatggcgaaa aacggtcgcc gttgcacgac 240
attaaatgtc acggtattgt agattaaaaa gatacccac 279

<210> 11
<211> 376
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (99)
<223> a, t, c or g

<400> 11
tgctcccgaa acctgggggt gtgcctgctc tgtatgcacg gcatacggac atccttcccc 60
tgagacccgc ggtcgaacca gccacgtgtc catcatagng ggtcaacccc ggccaagggc 120
gacggcacgc caagttcgcc gaccgttaac ctagtgctgt tagcttcatt tgctgcgatc 180
aaaacagctg gtcggccgtt aggaactgaa ttgaaactca accgatttgg tgccgccgta 240
ggtgtcctgg ctgcgggtgc gctggtgttg tccgcgtgtg gtaacgacga caatgtgacc 300
gggggaggtg caaccactgg ccaggcgtcg gcaaaggtcg attgcggggg gaagaagaca 360
ctcaaagcca gtgggt 376

<210> 12
<211> 393
<212> DNA
<213> Mycobacterium tuberculosis

<400> 12
atactcaagc tttgccgacg agcgggcgat gttgatgacg ggaaacccca gcgcacaacc 60
gacgattttg gcgtagccgg cggacgtctg ctcgattccg atcacgtcgg cgctcgcatc 120
gagcatggcg ccggcgacgg ctagcagcga tccgccgtcg tcgaggagca cgacacgagc 180
cgtacgcccg gccgtaagcc gcgcccagga ttcggcgaaa aaccgttcta cgtggcgggt 240
gtactgggtg tcgaatgatt cgtggggtgc gtaggcgtcg ctgcaatcgt cgacatagat 300
gccgtcgggc cgcatcgcgt cgacaactcc gggtgagtgg aatagcactt gccgatcacc 360
gcgacgttgc gcggatgagg ccgaacccga ata 393

<210> 13
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<400> 13
tcctatgtcc ctgccgagca ngtgatcgaa cgcggtgaca gatttgtcta tcctggacct 60
gacggtgagg tcgaagtttt ccaggaattc ggcaaaatcg gtaagagcct gaagaattcg 120
gtatcgccgg acgaaatctg cgacgcatac ggggggcatat acgcttcggg tttacgagat 180
gtcgatgggg ccgctggagg cttcacgtcc atgggccaca aaggatgttg tcggcgcgta 240
ccgttttctg cagcgggtgt ggcgcttggt cg 272

<210> 14
<211> 286

<212> DNA
<213> Mycobacterium tuberculosis

<400> 14
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atactcaagc ttgattccgc cgaaaccgac cgtgagcacc ccgccagcca ccacgctcgg 60
gtcgggcgcc gggcccgggc cgccaggctg ctccgctcgg tgatggcacg ccaccgcgac 120
accacccggc tgcgctacgt ctaaccattc caggcggagc tacatcagct cggccgccca 180
gtgttcgggc cctctttcca ggtcgaagtc tataccgata tgcgcatccg cagccgccac 240
cctggagaac agaacgatgc cctactaatg cttgtctggc ggggcc        286
```

<210> 15
<211> 357
<212> DNA
<213> Mycobacterium tuberculosis

<400> 15
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ggtacgcttc ggtcgcagtc tgcgagtgat gcatgacgac cgggacctcg tcggcatctt 60
ccatagcccg ccacaccttc agttgctcac cggaatccaa ccggtagaag gtcggcgagc 120
gctcggcatt ggtcatcggg atatgccgct cgggacggtc agagccctcg ggtccggcca 180
gcactccgca ggcttcgtcg gggtggtcgc gacgcgcatg ggccaccatc gcattcacca 240
ggtctgcgcg aatcaccagc acgtagacgg ttcctttcct aagcaacacc gaagtttcag 300
gacccgaatg ctccgggaaa catgtcacgg taggtcggta ttccggctac cggctga    357
```

<210> 16
<211> 83
<212> DNA
<213> Mycobacterium tuberculosis

<400> 16
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ggcgtcaacg gtgtcggaac ccgcgtcaag caattggtag gcctgcagtc tgtgaatcag 60
gccgacgctg tggccgccgc ggc        83
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<210> 17
<211> 383
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (5)
<223> a, t, c or g

<220>
<221> modified_base
<222> (190)
<223> a, t, c or g

<220>
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<222> (268)
<223> a, t, c or g

<220>
<221> modified_base
<222> (279)
<223> a, t, c or g

<220>
<221> modified_base
<222> (382)

<223> a, t, c or g

<400> 17
ggctngcgta cccggtaccg gccgcgggcc taccacgtgc cggaactgga agcgcagtaa 60
gccctcaacg cgccaccgct ttggcccgcg cgcccggcgt aggcgcatcg gcggtggccg 120
tggggcggcg cactgcgacc tcaccagcgg ctttcgagct ttgttcgatc aaccggccag 180
catggtcgan gatgcattcg agaccatatt cgaaattggt ttcatcgggg gccccgatcc 240
gatgccccct cccagttgcg tgagcaanca gcggagtcnt cgcgggatcg atggccacgg 300
ggtgttcaat ggcggatggt ccgctgcccg ccgactggct cttgcgggag aaccgatcta 360
gcaccaccga tccgcgcacg tng 383

<210> 18
<211> 603
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (7)
<223> a, t, c or g

<220>
<221> modified_base
<222> (17)
<223> a, t, c or g

<220>
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<222> (21)
<223> a, t, c or g

<220>
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<222> (38)
<223> a, t, c or g

<220>
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<222> (51)
<223> a, t, c or g

<220>
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<222> (82)
<223> a, t, c or g

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<222> (100)
<223> a, t, c or g

<220>
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<222> (103)
<223> a, t, c or g

<220>
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<222> (112)
<223> a, t, c or g

<220>

<221> modified_base
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<223> a, t, c or g

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<222> (121)
<223> a, t, c or g

<220>
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<222> (176)
<223> a, t, c or g

<220>
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<222> (231)
<223> a, t, c or g

<220>
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<222> (241)
<223> a, t, c or g

<220>
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<222> (243)
<223> a, t, c or g

<220>
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<222> (250)
<223> a, t, c or g

<220>
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<222> (284)..(285)
<223> a, t, c or g

<220>
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<222> (293)
<223> a, t, c or g

<220>
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<222> (297)
<223> a, t, c or g

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<222> (348)
<223> a, t, c or g

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<223> a, t, c or g

<220>
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<222> (422)
<223> a, t, c or g

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<222> (441)
<223> a, t, c or g

<220>
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<222> (489)
<223> a, t, c or g

<220>
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<222> (507)
<223> a, t, c or g

<220>
<221> modified_base
<222> (527)
<223> a, t, c or g

<220>
<221> modified_base
<222> (531)
<223> a, t, c or g

<220>
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<222> (544)
<223> a, t, c or g

<220>
<221> modified_base
<222> (555)
<223> a, t, c or g

<220>
<221> modified_base
<222> (578)
<223> a, t, c or g

<400> 18
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attgcggatg atcgggccgc cnacgtcgtt gtgtacctcn tcngtcacaa cnaanccgaa 120
ncgtatgact cggtccacgc ggtgcggcac atggtggaca ccacaccgcc accgcncggg 180
gtgaaggcct atgtcaccgg tccggcaaca ctcaatgccg accaggccga ngccggacac 240
nanagtatcn ctaacgtcac cgcgatcacg agcatggtga tcgnncaatg ttnctantga 300
tctatcgctc cgtaattacc gcggttctcg tcttgatcat ggtcgcancg aactccggcg 360
caatccgcgg attcatcgnc ttgctcgccg atcacatatt ttcagccttt cacattgcaa 420
cnaacctgct cgtctcatgg ngatgcggcg acacggacta ccgatatcat gctcgccgtt 480
acacaatcnc gccacgccgc gaagacngga aacgcttcta cacaatnttc ncgggacgcc 540
actnaacttg gttcnggttt gacattgccg cgcatgtntg cccagctttg ccggctcccc 600
tta   603

<210> 19
<211> 190
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (84)

<223> a, t, c or g

<220>
<221> modified_base
<222> (94)
<223> a, t, c or g

<220>
<221> modified_base
<222> (179)
<223> a, t, c or g

<400> 19
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aacgctgggc ggattggccc tgcngctgca gcanaccatc gacgccatcg aattgccggc 120
aatctcgttc agccaatcca tacccatcga cattccgccg atcgacatcc cggccttcnc 180
cctttaacgg 190

<210> 20
<211> 506
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (17)
<223> a, t, c or g

<220>
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<222> (47)
<223> a, t, c or g

<220>
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<222> (107)
<223> a, t, c or g

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<222> (154)
<223> a, t, c or g

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<223> a, t, c or g

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<222> (229)
<223> a, t, c or g

<220>
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<222> (231)
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<222> (450)
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<220>
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<222> (453)
<223> a, t, c or g

<220>
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<222> (476)
<223> a, t, c or g

<400> 20
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ttacggtgat cgcgcatcac ctggttcatg aactggaagc agcgcancgc ttcctttttcg 120
gccgcaacat gagccagcct ctcgtccgcg gtcnggtgca ggtgctcggg cagctcggcc 180
gcgacagccg cctgaccctg aaaccagctt ccatatcccg cgacnaacna cnccagtccg 240
ctacgtaacc cctccgcgac tgtccatgga caacagcgcg ttctccaccg accgggcccg 300
ggtgtggggt gtttcggcga ccggcagcca ggtggtccac actgccgacg ggcgccgcga 360
gccgttcacc gaccaagccg ccgaacaagt ccgcccgatc gcatactcca accggttgcg 420
gtactgcagg tcagctggcg tacctcctcn tcncgctcgg cgaagtcttg ctccancacg 480
tcgcagaacg gcaaggaaca cgttca 506

<210> 21
<211> 388
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)..(7)
<223> a, t, c or g

<220>
<221> modified_base
<222> (34)
<223> a, t, c or g

<220>
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<222> (38)
<223> a, t, c or g

<220>
<221> modified_base
<222> (53)
<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
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<222> (86)
<223> a, t, c or g

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<222> (101)
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<222> (118)
<223> a, t, c or g

<220>
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<222> (135)
<223> a, t, c or g

<220>
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<222> (159)
<223> a, t, c or g

<220>
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<222> (177)
<223> a, t, c or g

<220>
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<222> (180)
<223> a, t, c or g

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<223> a, t, c or g

<220>
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<222> (204)
<223> a, t, c or g

<220>
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<222> (227)..(228)
<223> a, t, c or g

<220>
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<222> (232)
<223> a, t, c or g

<220>
<221> modified_base
<222> (264)
<223> a, t, c or g

<220>
<221> modified_base
<222> (352)
<223> a, t, c or g

<400> 21
gaccgnncca tgtttccaca atgtggtgcc agtncggngg ctacgtgcca tcnanacact 60
ggcgcaggct atcgcacccg ttatcngcta cgaacaaatc ncggtatgcg ttctttanca 120
tgagtcggcg accgncgatc atggtcgaca cccacgacng aaatacgcag atcgccntcn 180
agcntgtgtg ccgcggatta tcangactga cctcctggct gaccggnntg tntggtcgcg 240
atgcctggcg cccggccggc gtgntcgtgg tcggctcgga tagcggaagtc agctaattct 300
cgtggcagct cgaaagggtc ctgccggtgc cggtctttgc gcaaaccatg cncatgttac 360
ggtccctcgg gtgcggcctg gcggcggc 388

<210> 22
<211> 138
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (51)
<223> a, t, c or g

<400> 22
gggatgggcg ggcccgctaa actcttcgtg ttccactaac tccgggaggg ncaatctcgg 60
gccgttatgg ctcacgtcgc gtcgccctcc gaccgcgaac attcggagtt ggcagcaacc 120
tggtagcacc ctggccgg   138

<210> 23
<211> 142
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (131)..(132)
<223> a, t, c or g

<400> 23
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ggcggtaccg cgccaccgag tcgatgccgt ggtcgcggaa gaatgcctcc cgaaatcgca 120
cggccttccc nntttaaacg ga   142

<210> 24
<211> 441
<212> DNA
<213> Mycobacterium tuberculosis

<220>
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<222> (136)
<223> a, t, c or g

<220>
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<222> (166)
<223> a, t, c or g

<220>
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<222> (208)
<223> a, t, c or g

<220>
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<222> (251)
<223> a, t, c or g

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<220>
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<223> a, t, c or g

<220>
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<222> (334)
<223> a, t, c or g

<220>
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<222> (349)
<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
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<222> (405)
<223> a, t, c or g

<220>
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<222> (437)
<223> a, t, c or g

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gtcattggcc accggcggcg gctgtccggg aaatggcggg tccccggtgg ttttgctgat 120
gagtgctgaa ccgtantcga agtgggcggc gtcagactcc acccanccag caggcagcgc 180
gaagctgaat cctccaaccg ggttgtcnat ccggacaagt tggggtgcgt ttggggcaat 240
gacaggtggc ngcggtgcgt tcgggtccgc cggcggaagt gctgcgttgg gatcncccgc 300
tgggcattcg gcnttttttgc ggcggccggt ggtnggggggg caacaggtnt cccngtgcgg 360
gtggcgctca acggtcnacg gcgcaagccg ccgttgttgg taccnggggc gctggctccg 420
gatcgcgttg gcggtcnccg g                                          441


<210> 25
<211> 453
<212> DNA
<213> Mycobacterium tuberculosis

<220>
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<222> (29)
<223> a, t, c or g

<220>
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<221> modified_base
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<223> a, t, c or g

<220>
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<222> (280)
<223> a, t, c or g

<220>
<221> modified_base
<222> (302)
<223> a, t, c or g

<220>
<221> modified_base
<222> (325)
<223> a, t, c or g

<220>
<221> modified_base
<222> (331)
<223> a, t, c or g

<220>
<221> modified_base
<222> (368)
<223> a, t, c or g

<220>
<221> modified_base
<222> (374)..(375)
<223> a, t, c or g

<220>
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<222> (395)
<223> a, t, c or g

<220>
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<222> (401)
<223> a, t, c or g

<220>
<221> modified_base
<222> (423)
<223> a, t, c or g

<220>
<221> modified_base
<222> (426)
<223> a, t, c or g

<220>
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<222> (432)
<223> a, t, c or g

<220>
<221> modified_base
<222> (444)
<223> a, t, c or g

<400> 25
ctacaccatc gaatacgacg gcgtcgccna ctttccgcgg tacccgctca actttgtgtc 60
gaccctcaac gccattgccg gcacctacta cgtgcactcc aactacttca tcctgacgcc 120
ggaacaaatt gacgcagcgg ttccgctgac caatacggtc ggtcccacga tgacccagta 180
ctacatcatt cgcacggana acctgccgct gctagagcca ctgcgatcgg tgccgatcgt 240
ggggaaccca ctggcgaacc tggttcaacc aaacttgaan gtgattgtta acctgggcta 300
cngcgacccg gcctatggtt attcnacctc nccgcccaat gttgcgactc cgttcgggtt 360
gttcccanaa gtcnncccgg tcgtcatcgc cgaanctctc ntcccgggac ccacagggaa 420
tcngcnattt cncctacaaa tcanccacct cca 453

<210> 26
<211> 228
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (180)
<223> a, t, c or g

<220>
<221> modified_base
<222> (224)
<223> a, t, c or g

<400> 26
gcatgatcgg ccacctttcg ggccgcccgg catacggcgg cgtaccgatc tccgcgtcat 60
acacccgcgg gtaatcgccg acggtgccgg ttcgcgagcc gaaggtgacg actctgattg 120
aatcgagttc caggtccagc gggtggcgca ccaacggcgc gagctcaacg acgtcaatcn 180
cgttgtcgct ttctacggtc accgaccctg gtgaccgtag ttcncccg 228

<210> 27
<211> 357
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (53)
<223> a, t, c or g

<220>
<221> modified_base
<222> (161)
<223> a, t, c or g

<220>
<221> modified_base
<222> (226)
<223> a, t, c or g

<220>
<221> modified_base
<222> (242)
<223> a, t, c or g

<220>
<221> modified_base
<222> (306)
<223> a, t, c or g

<220>
<221> modified_base
<222> (335)
<223> a, t, c or g

<400> 27
gacactatag aatactcaag cttgccaacc gccagcctgc atccggcggc gancactgct 60
ccgccgacca gtacgaacca acctgcggtg cccaggccat tgacgatgtg ctggtcggcg 120
cccgcgagtc cgcgcaccat caacgccgcg ggcaccacca nggcggcccc accctgcacg 180
gcgacgatca ttccggcgcc gctcacggcg ggcggggctc gaacangcac agcatcaacg 240
tngtcacccg gccgtgaccg gcccgcatcg tcacaccacc caagcccatt gccgtcctcc 300
tcaacngggc gacccggccc gcatcgtcac acggnctaag gccattgccg tcctcct 357

<210> 28
<211> 384
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (48)
<223> a, t, c or g

<220>
<221> modified_base
<222> (69)
<223> a, t, c or g

<220>
<221> modified_base
<222> (115)
<223> a, t, c or g

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<220>
<221> modified_base
<222> (139)
<223> a, t, c or g

<220>
<221> modified_base
<222> (146)
<223> a, t, c or g

<220>
<221> modified_base
<222> (157)
<223> a, t, c or g

<220>
<221> modified_base
<222> (182)
<223> a, t, c or g

<220>
<221> modified_base
<222> (236)

<223> a, t, c or g

<220>
<221> modified_base
<222> (246)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<220>
<221> modified_base
<222> (256)
<223> a, t, c or g

<220>
<221> modified_base
<222> (264)..(265)
<223> a, t, c or g

<220>
<221> modified_base
<222> (274)
<223> a, t, c or g

<220>
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<222> (278)
<223> a, t, c or g

<220>
<221> modified_base
<222> (280)
<223> a, t, c or g

<220>
<221> modified_base
<222> (290)
<223> a, t, c or g

<220>
<221> modified_base
<222> (301)
<223> a, t, c or g

<220>
<221> modified_base
<222> (312)
<223> a, t, c or g

<220>
<221> modified_base
<222> (314)
<223> a, t, c or g

<220>
<221> modified_base
<222> (321)
<223> a, t, c or g

<220>

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<221> modified_base
<222> (335)
<223> a, t, c or g

<220>
<221> modified_base
<222> (337)
<223> a, t, c or g

<220>
<221> modified_base
<222> (349)
<223> a, t, c or g

<220>
<221> modified_base
<222> (358)
<223> a, t, c or g

<220>
<221> modified_base
<222> (377)
<223> a, t, c or g

<400> 28
tcggcgccat cggcaccttc gaggacctgt atttcgacgc cgtggccnac ctgaggttgg 60
cggtggacna agtgtgcacc cggttgattc gctcggcctt gccggatgcc acccngcgcc 120
tggtggtcga tccgcnaana gacaanttgt ggtggangct tctgctgcct gcgacaccca 180
cnacgtggtg gcaccgggca gctttagctg gcatgtcctg accgcgctgg ccgacnactc 240
cagacnttcc acnaanggtc gccnncccaa tgtnccgnan tgtctccggn tccctttacc 300
ncccaatggg cngnttccac nggttacggg ccccntnccg gcgggtctnc ctcccaanct 360
accaaatacg cccgacnttc cgga                                       384


<210> 29
<211> 266
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (163)
<223> a, t, c or g

<400> 29
atactcaagc ttttatggtg atcgcgcatc acctggttca tgaactggaa gcagcgcagc 60
gcttcctttt cggccgcaac atgagccagc ctctcgtcgg cggtcgggtg caggtgctcg 120
ggcagctcgg ccgcgaacag cccggcttga accctgaaaa ccngctttcc atatcccgcg 180
acgaaagaac gccagttccg ctacttaacc cctccgcgaa ccgtccatgg acaacagcgc 240
gttctccacc aaccgggccc gggtgt                                     266


<210> 30
<211> 423
<212> DNA
<213> Mycobacterium tuberculosis

<400> 30
tcggctcagg ccgcgctgct ggtagagtcg ctgaccggtg caggtttcga caatgtggtg 60
ccggttcggc ggctacgtgc catcgagaca ctggcgcagg ctatcgcacc cgttatcggc 120
tacgaagcaa atcgcggtat gcgttcttga gcatgagtcg gcgaccgtcg tcatggtcga 180
cacccacgac ggaaagacgc agatcgccgt caagcatgtg tgccgcggat tatcaggact 240
gacctcctgg ctgaccggca tgtttggtcg cgatgcctgg cgcccggccg gcgtggtcgt 300
```

```
ggtcggctcg gatagcgagg tcagcgaatt ctcgtggcag ctcgaaaggg tcctgccggt 360
gccggtcttt gcgcaaacaa tagcgcaggt tacggtcgcg cggggtgcgg cctggcggcg 420
gcc                                                                423
```

<210> 31
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (94)
<223> a, t, c or g

<220>
<221> modified_base
<222> (195)
<223> a, t, c or g

<220>
<221> modified_base
<222> (216)
<223> a, t, c or g

<220>
<221> modified_base
<222> (282)
<223> a, t, c or g

<220>
<221> modified_base
<222> (446)
<223> a, t, c or g

<400> 31
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caagctattt aggtgacact atagaatact caagcttcgc gtctacgccg gcccggagca 60
tccgcacagc gctcagcagc cggttccgta cganctcaag caggtggcgc aatgaccgaa 120
accaccccag ccccgcaaac cccggcggcc ccggccgggc ccgcacaatc gttcgtgttg 180
gagcggccca tccanaccgt tgggcgccgt aaggangccg tggtacgaat gcggctggtg 240
cccggcaccg gcaagttcga cctcaacggc cgcagcttgg angactactt cccaaacaag 300
gtgcaccagc agttgatcaa ggcacccctg gtcaccgtgg atcgggtgga aagtttcgac 360
atctttgccc acctgggcgg cggcggccgt ccggtcaggc cgggcctgcc ctgggtatcg 420
cccgggcatt gattctggta tccccngaag aaccg                              455
```

<210> 32
<211> 371
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (352)
<223> a, t, c or g

<220>
<221> modified_base
<222> (371)
<223> a, t, c or g

<400> 32
```
cggttggcca ccgcttctgc ggtgccgccg ccgtcgacaa tgaccgtgtc gtccttgctg 60
```

```
accaccacgc gtcgggccga gcccagcacc tccaagccca cctcgcgcag caccatgccg 120
gcgtcggggt tgaccacctg gccacccgtc accaccgcca ggtcctcaag gaaacgcctt 180
acggcggtca ccgaagtacg gccccttgac cgcgaccgct ttcaacgtct tgcgaatcgc 240
gttgacgacc agcgtcgcca acgcttcgcc ctccacgtct tcagccacga tcagtagtgg 300
cttacccgtt cctgcaacct tttccagcaa tggcaacaga tcgggaagcg anctgatctt 360
gtcttggtgc n                                                      371
```

<210> 33
<211> 320
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (62)
<223> a, t, c or g

<220>
<221> modified_base
<222> (85)
<223> a, t, c or g

<220>
<221> modified_base
<222> (160)
<223> a, t, c or g

<220>
<221> modified_base
<222> (165)
<223> a, t, c or g

<220>
<221> modified_base
<222> (204)
<223> a, t, c or g

<220>
<221> modified_base
<222> (217)
<223> a, t, c or g

<220>
<221> modified_base
<222> (260)
<223> a, t, c or g

<220>
<221> modified_base
<222> (279)
<223> a, t, c or g

<220>
<221> modified_base
<222> (282)
<223> a, t, c or g

<220>
<221> modified_base
<222> (292)
<223> a, t, c or g

```
<220>
<221> modified_base
<222> (300)..(301)
<223> a, t, c or g

<400> 33
ccaagctatt taggtgacac tatagaatac tcaagctttt ggctgggtcg ccttcgaatt 60
cngcgtgcac cgctatgggt tgcancagcg gctggcgccg cacacccccac tggcccgggt 120
gttttcgccc cgaacccgga tcatggtgag cgaaaaggan attcncctgt tcgatgctgg 180
gattcgccac gccaaggcat ctancgatta ctctccncgg ggtgggaaaa gtgcccaatc 240
cccctccctc caactttccn aacaatcatt ccggttccnc cntccggttg gnggtaaccn 300
nccaataaaa ccccctgcccg                                            320
```

```
<210> 34
<211> 383
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (7)
<223> a, t, c or g

<220>
<221> modified_base
<222> (74)
<223> a, t, c or g

<220>
<221> modified_base
<222> (189)
<223> a, t, c or g

<220>
<221> modified_base
<222> (196)
<223> a, t, c or g

<220>
<221> modified_base
<222> (198)
<223> a, t, c or g

<220>
<221> modified_base
<222> (224)
<223> a, t, c or g

<220>
<221> modified_base
<222> (238)
<223> a, t, c or g

<220>
<221> modified_base
<222> (323)
<223> a, t, c or g

<220>
<221> modified_base
<222> (326)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (332)
<223> a, t, c or g

<220>
<221> modified_base
<222> (350)
<223> a, t, c or g

<400> 34
gcccgcncat ggccaatccc cgaagacatc attggccagt ggccgggcgc taacaggttc 60
cagccccccca ccantgccgc tcgaacatgc ggtgcaaccc attcgcaggc cggcagggaa 120
agcaccgcgg aagccgcaaa gggctgcagt tccgcgccca ataatgtcgt ccgcaaccag 180
atgcgctcna aaaccncncc ggcagtcagc gcaccgacg cgangtcgaa agacgtcntc 240
agcgcgccca catggggtgc caatcggcac ggcaggtatg ccgcgcgcaa cccgagcgcg 300
tggtgcatgc ccacggtccg cangangcgc ancacccgcc aatgccgaan cccacgaaac 360
atcgggcgca tccaccttca acc 383
```

```
<210> 35
<211> 275
<212> DNA
<213> Mycobacterium tuberculosis

<400> 35
atactcaagc ttgcccagcc gtcgatgaca agaaatatgt ccgcaaaaga ctcagcggcc 60
gactttgctc gcagctggcg gtaccgcgcc accgagtcga tgccgtggtc gcggaagaat 120
gcctcccgaa ttcgcacggc caattccatt ccgggaagca tccgcaatgc cagctgcggt 180
tgcccctgc cggccacggc acccacttgc ggcattgcgt ccacctgggc cagcgccccg 240
ccgccaaatt ccaaacaata aaaattgcac ccggc 275
```

```
<210> 36
<211> 322
<212> DNA
<213> Mycobacterium tuberculosis

<400> 36
ccacccgtgt attttgggat gggcaaaaag gcgaagcacc gcgtggccac gaacgccggg 60
agggacaatc tcgggcggct agggcttctc gcgggaaggc ccgaacgtac ggcgtttcaa 120
cacgtcgcgt cgccctccga ccgcgaacat tcggggatgg cagcaacctg gtagcaccct 180
ggccgggcga tgatctgcag cgtcgccgcg ggtagtcgcc gcccgggcgg ctacagtctg 240
aaacgcgatg accatcgatg tgtggatgca gcatccgacg caacggttcc tacacggcga 300
tatgttcgcc tccctgcccc gt 322
```

```
<210> 37
<211> 167
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (126)
<223> a, t, c or g

<220>
<221> modified_base
<222> (134)
<223> a, t, c or g
```

<220>
<221> modified_base
<222> (137)
<223> a, t, c or g

<220>
<221> modified_base
<222> (141)
<223> a, t, c or g

<220>
<221> modified_base
<222> (147)
<223> a, t, c or g

<220>
<221> modified_base
<222> (164)
<223> a, t, c or g

<400> 37
ctgcccatgt ttggggacgc ccgaccagcc gatgctggag gcctacacgg cccttggtgc 60
gctggccacg gcgaccgagc ggctgcaact gggcgcgttg gtgaccggca atacctaccg 120
cagccngacc cctntcncaa naggatnttg ttcgccggac cccnctc 167

<210> 38
<211> 287
<212> DNA
<213> Mycobacterium tuberculosis

<400> 38
ccgactttcc gcggtacccg ctcaactttg tgtcgaccct caacgccatt gccggcacct 60
actacgtgca ctccaactac ttcatcctga cgccggaaca aattgacgca gcggttccgc 120
tgaccaatac ggtcggtccc acgatgaccc agtactacat cattcgcacg gagaacctgc 180
cgctgctaga gccactgcga tcggtgccga tcgtggggaa cccactggcg aacctggttc 240
aaccaaactt gaaggtgatt gttaacctgg gctacgcgac cgcctttt 287

<210> 39
<211> 322
<212> DNA
<213> Mycobacterium tuberculosis

<400> 39
atactcaagc tttgtcacac caagtgtttc gaccaggcgc tccatccggc gagtggatac 60
tcccagcagg tagcaggtcg ccaccacgct ggtcagtgcg cgttcagctc gcttgcggcg 120
ctgcagcagc cattcgggga aatacctgcc ctggcgcagc tgggggatcc caacttcaat 180
ggttgcggca cgggtgtcaa attcacggtg gcggtagccg ttgccctaat tggaccgctc 240
atcgctgctt tcgcggtacc ccgccccgca cagggcttcg gcttcagccc ccatcagggc 300
ggcaataaac ttcaagagca cc 322

<210> 40
<211> 471
<212> DNA
<213> Mycobacterium tuberculosis

<400> 40
gaggcagctt cgccggcaat tctactagcg agaagtctgg cccgatacgg atctgaccga 60
agtcgctgcg gtgcagccca ccctcattgg cgatggcgcc gacgatggcg cctggaccga 120
tcttgtgccg cttgccgacg gcgacgcggt aggtggtcaa gtccggtcta cgcttgggcc 180
tttgcggacg gtcccgacgc tggtcgcggt tgcgccgcga aagcggcggg tcgggtgcca 240

```
tcaggaatgc ctcaccgccg cggcactgca cggccagtgc cgcggcgatg tcagccatcg 300
ggacatcatg ctcgcgttca tactcctcga ccagtcggcg gaacagctcg attcccggac 360
cgcccagcgc attggtgatg gaatcggcga acttggccac ccgctgggtg ttgacatcct 420
cgacggtggg caattgcgcc tcggtaagct ttgccgcgta gccttttcat c        471
```

<210> 41
<211> 247
<212> DNA
<213> Mycobacterium tuberculosis

<400> 41
```
atactcaagc ttcactgaca agggacgaat tcgtcggccg cctgttcgac tgggtggtgg 60
ccgagctggt cgccaccact caggccgcgg tcacggcggt accggcgcgg gagcaaactc 120
gcgcgggcat ggccaacttc ttgcggacca tcaccgcaga cgcccgcttc ggacccctgc 180
tgtccaccac acagttggcc aacgcattaa tcacccgcaa gcttgcggaa tccaccgccc 240
tgttcgc                                                          247
```

<210> 42
<211> 325
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (19)
<223> a, t, c or g

<220>
<221> modified_base
<222> (121)
<223> a, t, c or g

<400> 42
```
tccatcaccc gatgtggcng gagcactgcc atgtcgatct caactaccac ctccggccgt 60
ggcggttgcg cgccccgggg ggtccgcgcg aactcgacga ggcggtcgga gaaatcgcca 120
ncaccccgct gaaccgcgac cacccgctgt gggagatgta cttcgttgag gggcttgcca 180
accaccggat cgcggtggtt gccaaaattc accatgcgtt ggctgacggt gttgcctcgg 240
caaacatgat ggcacggggg atggatctgc cgccgggacc ggaggtcggc cgctatgtgc 300
ctgacccccgc tcctaccaag cggca                                      325
```

<210> 43
<211> 221
<212> DNA
<213> Mycobacterium tuberculosis

<400> 43
```
agctttgcag ttgctgagta atgtcggcca acgtcaccac aaccgcgatg aattcaatca 60
tgccgcccag ggcggccaac ccaatggtgg ccgcgagcgg cagctcgatc gcagcgcgga 120
ggttgccggc cgccagttga ttcacgaaca gggtgaggtc ataggcgggc aggatagtga 180
cgaaggcaag acctccatct gccgtcggaa gaagtatcga g                     221
```

<210> 44
<211> 285
<212> DNA
<213> Mycobacterium tuberculosis

<400> 44
```
agcttcagaa caggcctgtt gtgggcgcac ccggctcgcc gagttctgca cgcaccgcct 60
caagtgcggc ccgcaccgcc ggcatctccc ggtcacgcag ggccgcggcc cgcgccgcag 120
```

```
cgacggcgtg ttcgcgcagt tcgccgtcaa tgatgctgac ctgatcggcc acccgggcgt 180
tctcggcgtc gtcgcgttca ctaatcgcgg tgctcagcag cgtctcgaca gccaccaccc 240
gagtggcgac cagctgctcc accacggacc gcagcgatgc ccgtc          285
```


<210> 45
<211> 179
<212> DNA
<213> Mycobacterium tuberculosis

<400> 45
```
atactcaagc ttcagttcct ccacgacgcg ttcccaaatg aatttcccga tcccacaatc 60
tcggttcaga tacaggtcgc catacccctt acttcggcaa cgctgggcgg attggccctg 120
ccgctgcacc aaaccatcaa cgccttcaaa ttgccggcaa tctcgttcag ccaatccat 179
```


<210> 46
<211> 315
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (125)
<223> a, t, c or g

<220>
<221> modified_base
<222> (155)
<223> a, t, c or g

<400> 46
```
gctctacgcc gcctacgggt cgaacatgca tcccgagcag atgctcgagc gcgcacccca 60
ctcgccgatg gccggaaccg gctggttacc cgggtggcgg ctgacgttcg gcggcgagga 120
catcngctgg aaggggcgc ttgccaccgt cgtcnaagac ccaaattcga aggtgttcgt 180
cgtgctctac gacatgaccc cggcggacga gaagaacctt gaccggtggg aaggctccga 240
gttcggtatc caccagaaga tccgatgccg cgtggagcgc atttcctcgg acaccacaac 300
gggatcccgt cctcg          315
```


<210> 47
<211> 285
<212> DNA
<213> Mycobacterium tuberculosis

<400> 47
```
atactcaagc ttgccaaaga gacctcgtcc accaagcagg acgcgaccgt cgaggtggcg 60
atccggcttg gcgtcgaccc gcgtaaggca aaccagatgg ttcgcggcac ggtcaacctg 120
cccacaccgg cactggttaa gaactgcccg cgtcgcggtt ttcgcggttg gtgaaaaggc 180
caatgcctgc gtttgccgtg ggggcggatg ttgtcgggag tgacaatctg atcaaaagga 240
ttcagggcgg ttggctggaa ttcaatgccg caatcgcgac accgg          285
```


<210> 48
<211> 369
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (364)
<223> a, t, c or g

<400> 48
ccacggcgtg gatcaaggta ccggccggga tgttgcgcaa tggcaggttg ttgcccggct 60
tgatgtcggc gttagcgccg gattccacca catccccttg cgaaagtccg ttgggtgcaa 120
tgatgtagcg cttctcccca tcgagatagt ggagcaacgc aatccgtgcg gtacggttcg 180
ggtcgtactc gatgtgcgcg accttggcgt tgacaccatc tttgtcattg cggcgaaagt 240
cgatcatccg gtaagcgcgc ttatgaccgc cgcctttgtg ccgggtggta atccggccat 300
gcgcgttgcg tccaccgcga cgtgcagcgg gcgcaccagc gacttctccg gggttgaccg 360
ggtnatctc 369

<210> 49
<211> 461
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (89)
<223> a, t, c or g

<220>
<221> modified_base
<222> (117)
<223> a, t, c or g

<220>
<221> modified_base
<222> (183)
<223> a, t, c or g

<220>
<221> modified_base
<222> (353)
<223> a, t, c or g

<400> 49
gcagcatgac ggcggtagcg aacaccgccg gatgcagcgc aagtagcgtc gatgtgctca 60
cggaatcgcc ccggcaccgc gatctcgang atcaccagtg ccaccccctg cagcgcnaca 120
ccgacgattc cgtacaccgc cacgccgatc aggccctggg ccatctgatt ggagctggcg 180
tanatggcgg cgatggtgac gatggccagc gccacataca ttgtggcggc cagaaccacg 240
gcgttggggc ggcggtcgat gaacactagg cgacgcagat cgcccggggt caacaggttg 300
accatcagaa agcctgcgac tagcacggcg gcgccactag gaagtacaag aangtggcca 360
ccacccccatg caggatcggg gtaaggctga tggtcccgaa atcgactccg gcctaataca 420
tgactctctc ctttgcgtca tcgccttact tgtgcgcgga a 461

<210> 50
<211> 127
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (24)
<223> a, t, c or g

<220>
<221> modified_base
<222> (118)
<223> a, t, c or g

<220>
<221> modified_base

<222> (120)
<223> a, t, c or g

<400> 50
gggacacacc tcgatgctgc cgcnatggac gcggtcgaac gcaagcagct gatcgagcta 60
caacgccgcg cggaacgctt ccgccgcggg cgtgacgcat cccgttgacc ggccggancn 120
ctctcta   127

<210> 51
<211> 305
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (24)..(25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (34)
<223> a, t, c or g

<220>
<221> modified_base
<222> (39)
<223> a, t, c or g

<400> 51
tgggcgcctc tttcggcctt cccnntttaa acgnagcang acattctggg tatcgagttg 60
tactggatgg tgttggcgat gtcggtgatc ctgctcctgg cggtgggatc cgactacaat 120
ctgctgctga tttcccggtt gaaagaggaa attggggccg gattgaacac cggaattatc 180
cgtgccatgg ctggtaccgg gggagtggtg acggctgccg gcatggtgtt cgccgttacc 240
atgtcgttgt ttgtgttcag cgatttgcga attattggtc agatcggtac caccatcgcc 300
ttccc   305

<210> 52
<211> 449
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (16)
<223> a, t, c or g

<220>
<221> modified_base
<222> (29)
<223> a, t, c or g

<220>
<221> modified_base
<222> (80)
<223> a, t, c or g

<220>
<221> modified_base
<222> (108)
<223> a, t, c or g

<220>
<221> modified_base
<222> (407)
<223> a, t, c or g

<220>
<221> modified_base
<222> (436)
<223> a, t, c or g

<220>
<221> modified_base
<222> (439)
<223> a, t, c or g

<220>
<221> modified_base
<222> (443)
<223> a, t, c or g

<400> 52
ccgatcggcg ccgcanctgg ttggtgttnc ggatgaatcc gcagcgaaaa tgtagctgcg 60
gtggcgtgtc gtgactcgtn ggcgtcgacg ctcgtggcag ccaccgancg gttggtccag 120
gatctggatg ggcaaagttg tgcggcccgg ccggtgacgg ccgatgagct gaccgaggtc 180
gacagcgccg tgttggctga cttggaaccg acatggagtc gccccggttg gcgtcacctc 240
aagcatttca atggttatgc gaccagtttt tgggttacgc cgtcagacat cacgtcggag 300
acttggatga gctgtgtctg ccagatagcc ccgaatcggg acgaccgtgg tcacggtgcg 360
tctgaccact cgggtcgggt cgcccgcgct atcggcatgg gtgcgtnatc acagcgacac 420
gcgcctgccc aaggangtnc ggncggacc 449

<210> 53
<211> 160
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (155)
<223> a, t, c or g

<400> 53
cggggttgcgg atccacgcgt gcgggttgtc agcagctacg gcactgaacc gcgcccacag 60
ctcgccgatc cgctttcggt ggttctcgat cgactcgccg taggcgatgc gcagcgcctg 120
ctcgaatatc gggtacacgt aggccggcct tcccnctttta 160

<210> 54
<211> 308
<212> DNA
<213> Mycobacterium tuberculosis

<400> 54
cttgattttg atcatcatga cgatcatcac cctaattttg ctacccgcac tggttatcgt 60
gggtaccgtc gtgctttcca tgggcgcctc tttcgggctt tccgtattgg tctggcagga 120
cattctgggt atcgatttgt actggatggt gttggcgatg tcggtgatcc tgctcctggc 180
ggtgggatcc gactacaatc tgctgctgat ttcccggttg aaaaaggaaa ttggggccgg 240
attgaacacc ggaattatcc gtgccatggc tggtaccggg ggagtggtga cggctgccgg 300
catggtgt 308

<210> 55
<211> 460

<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (239)
<223> a, t, c or g

<220>
<221> modified_base
<222> (337)
<223> a, t, c or g

<220>
<221> modified_base
<222> (379)
<223> a, t, c or g

<220>
<221> modified_base
<222> (391)
<223> a, t, c or g

<220>
<221> modified_base
<222> (398)
<223> a, t, c or g

<400> 55
```
ggggatccct agatcgacct gcaggcatgc aagcttggcg tgtcgttcca acccgaattg 60
gctttcggcg ccatcggtga ggcgggacac acctcgatgc tgccgccatg gacgcggtcg 120
aacgcaagca gctgatcgag ctacaacgcc gcgcggaacg cttccgccgc gggcgtgacc 180
gcatcccgtt gaccgggcgg atcgcggtga tcgtcgatga cggcatcgcc accggagcna 240
ctgtcaaggc ggcgtgccag gtcgcccggg cgcacggtgc ggacaaggtg gtgctggcgg 300
tcccgatcgg cccagacgac atcgtggcga gattcgncgg gtacgccgat gaggtggtgt 360
gtttggcgac gccggcgtng ttcttcgccg ncgggcangg ttaccgcaac ttcacccaga 420
cctccgacga cgaggtggtg gcgtctcctg gatcgtgctc                       460
```

<210> 56
<211> 299
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (171)
<223> a, t, c or g

<400> 56
```
aaggctgcag gtcgaagcgg ntggttacga ctccctgtgt gtgatggacc agttctacta 60
tctgcgtcta cacggccctt ggtgcgctgg ccacggcgac cgagcggctg caactgggcg 120
cgttggtgac cggcaatacc taccgcagcc ccgaccctgc tggcaaagat natcaccacg 180
ctcgacgtgg ttagcgccgg tcgagcgatc ctcggcattg gagccggcgg gtttgaactg 240
gaacaccgcc agctcggctt cgagtccggc acttccagtg accggttcaa ccggctcga 299
```

<210> 57

<211> 373
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (106)
<223> a, t, c or g

<220>
<221> modified_base
<222> (305)
<223> a, t, c or g

<220>
<221> modified_base
<222> (339)
<223> a, t, c or g

<220>
<221> modified_base
<222> (373)
<223> a, t, c or g

<400> 57
ctttccgcgg tacccgctca actttgtgtc gaccctcaac gccattgccg gcacctacta 60
cgtgcactcc aactacttca tcctgacgcc ggaacaaatt gacgcngcgg ttccgctgac 120
caatacggtc ggtcccacga tgacccagta ctacatcatt cgcacggaga acctgccgct 180
gctacagcca ctgcgatcgg tgccgatcgt ggggaaccca ctggcgaacc tggttcaacc 240
aaacttgaag gtgattgtta acctgggcta cggcgacccg gcctatggtt attcgacctc 300
gccgnccaat gttgcgactc cgttcgggtt gttccagang tcagcccggt cgtcatcgcc 360
gacgctctcg tcn 373

<210> 58
<211> 338
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (309)
<223> a, t, c or g

<220>
<221> modified_base
<222> (328)
<223> a, t, c or g

<400> 58
cggtcatagc cctcgggtcc ggccagcact ccgcaggctt cgtcggggtg gtcgcgacgc 60
gcatgggcca ccatcgcatt caccaggtct gcgcgaatca ccagcacgta gacggttcct 120
ttcctaagca acaccgaagt ttcacgaccc gaatgctccg ggaaacatgt cacggtaggt 180
cggtattccg gctaccggct gagcattgag cacgccggcc agcaccgcac gagccaggca 240
atcagccgcc gccgcaccga tcgcggtgac cagctgagtc tccggagaca atgcggccgg 300
cacgccggnc tccggcggca ccgctacngc gcccgtgg 338

<210> 59
<211> 374
<212> DNA
<213> Mycobacterium tuberculosis

```
<220>
<221> modified_base
<222> (40)
<223> a, t, c or g

<220>
<221> modified_base
<222> (134)
<223> a, t, c or g

<220>
<221> modified_base
<222> (139)
<223> a, t, c or g

<220>
<221> modified_base
<222> (336)
<223> a, t, c or g

<400> 59
gtgatggcac gccaccgcga caccacccgg ctgcgctacn tcgagccata ccgggcggag 60
ctacatcggc tcggccgccc agtgttcggg ccctctttcg aggtcgaggt cgataccgat 120
ttgcgcatcc gcanccgcnc cctggacgac agaaccgtgc cctacgagtg cttgtcgggc 180
ggggccaaag aacagcttgg catcctggcg cgattggccg gcgcggcgct ggtcgccaag 240
gacgacgccg ttccggtgct gatcgacgac gcgctggggt tcaccgatcc ggagcgacta 300
tcaagatggg ggaggtctct gacaccatcg gccccnacgg acatgtgatc gtgccgacgt 360
gcagtcccac cccg                                                   374


<210> 60
<211> 448
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (154)..(155)
<223> a, t, c or g

<220>
<221> modified_base
<222> (322)
<223> a, t, c or g

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<220>
<221> modified_base
<222> (347)
<223> a, t, c or g

<400> 60
gcgaaagtcc gttgggtgca atgatgtagc gcttctcccc atcgagatag tggagcaacg 60
caatccgtgc ggtacggttc gggtcgtact cgatgtgcgc gaccttggcg ttgacaccat 120
ctttgtcatt gcggcgaaag tcgatcatcc ggtnngcgcg cttatgaccg ccgcctttgt 180
gccgggtggt aatccggcca tgcgcgttgc gtccaccgcg accgtgcagc gggcgcacca 240
gcgacttctc cggggttgac cgggtgatct cggcgaaatc agatacgctg cgccgcgac 300
gaccaggcgt cgtgggcttg tncttgcgaa ttgncatgtc taatcangtc tttctctcac 360
gctctcgtcg ccgggctagg ccgcattgcc ctgctcctcc tcatcgcttc gctctgcatc 420
```

gtccccgggc taagcccgtg ccccgaaa

<210> 61
<211> 356
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (349)
<223> a, t, c or g

<400> 61
```
gatggttcgc ggcacggtca acctgccaca cggcactggt aagactgccc gcgtcgcggt 60
attcgcggtt ggtgaaaagg ccgatgctgc cgttgccgcg ggggcggatg ttgtcgggag 120
tgacgatctg atcgagagga ttcagggcgg ctggctggaa ttcgatgccg cgatcgcgaa 180
caccggatca gaatggccaa agtcggtcgc atcgctcggg tgctgggtcc gcgcggcctg 240
atgcccaacc cgaaaaccgg caccgtcacc gccgactccc catggcgtcc cggatatcaa 300
gggccggcaa atcaacttcc cggttgatca gcaaggcaac ctgcctccnc ctccgg 356
```

<210> 62
<211> 336
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (323)
<223> a, t, c or g

<400> 62
```
atactcaagc ttcgtcataa gaccatggtg cgctttcttt cacccgtcca gagtcggggg 60
catccgcacc ggctcgcatc gcatcatcct cccacgacgg gccgctcatc agcttgggcc 120
attttcaatgt acttgatacc ccgcgctgcg ggtaggccac tgcgacaatt caaacacggt 180
gtcacacggt gaatagtgtc gagatgggct ctgatcaacc gtcgcaaacc cggtttcgca 240
tcaatagcgg aatcccaccg ggttgcatgg aggctgctga ccttggaaaa caaaattttt 300
tcattacaac aaaacaaccg ccncggaaac tttgca 336
```

<210> 63
<211> 489
<212> DNA
<213> Mycobacterium tuberculosis

<400> 63
```
cgaattcggc gtgcaccgct atgggttgca gcagcggctg gcgccgcaca ccccactggc 60
ccgggtgttt tcgccccgaa cccggatcat ggtgagcgaa aaggagattc gcctgttcga 120
tgctgggatt cgccaccgcg aggccatcga ccgattactc gccaccgggg tgcgagaggt 180
gccgcagtcc cgctccgtcg acgtctccga cgatccatcc ggcttccgcc gtcgggtggc 240
ggtagccgtc gatgaaatcg ctgccggccg ctacctgcaa ggtgattctg tcccgttgtg 300
tcgaagtgcc tttcgcgatc gactttccgt tgacctaccg gctggggcgt cggcacaaca 360
ccccggtgag gtcgtttttg ttgcagttgg gcggaatccg tgctctgggt tacagccccg 420
aactcgtcac ggcggtgcgc gccgacggag ttgttatcac cgatccgttg ccgtaccgc 480
gccttgggc 489
```

<210> 64
<211> 448
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (160)
<223> a, t, c or g

<220>
<221> modified_base
<222> (377)
<223> a, t, c or g

<220>
<221> modified_base
<222> (423)
<223> a, t, c or g

<220>
<221> modified_base
<222> (428)
<223> a, t, c or g

<220>
<221> modified_base
<222> (448)
<223> a, t, c or g

<400> 64
tcagactcca cccagccagc aggcagcgcg aagctgaatc ctccaaccgg gttgtcgatc 60
cggacaggtt ggggtgcgtt tggggcaatg acaggtggcg gcggtgcgtt cgggtcggcc 120
ggcggaggtg ctgcgttggg atcgcccggc tgggcattcn gcgtgttggc ggcggccggt 180
ggtggggggg caacaggtgt cgccggtgcg ggtggcgctg cagcggtcga cggcggcgaa 240
gcggccgttg tgggtaccgg gggcgctggc tccggatcgg cgttggcggt cgcgggcacc 300
gcaacggtca ccaagctggc gctggccatc gccgcgatag ccagtgccgc caatcgtccc 360
ttgcgacgtg tcaagtnggg gtccacctga tgcatggcca aagaacctac cgtgttaacg 420
gcncaacnca aggaccgcgc cggtcgcn 448

<210> 65
<211> 346
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<220>
<221> modified_base
<222> (63)
<223> a, t, c or g

<220>
<221> modified_base
<222> (153)
<223> a, t, c or g

<220>
<221> modified_base
<222> (155)
<223> a, t, c or g

<220>
<221> modified_base

<222> (162)
<223> a, t, c or g

<220>
<221> modified_base
<222> (302)
<223> a, t, c or g

<220>
<221> modified_base
<222> (313)
<223> a, t, c or g

<400> 65
```
tttccgcggt acccgctcaa ctttgtgtcn accctcaacg ccattgccgg cacctactac 60
gtncactcca actacttcat cctgacgccg gaacaaattg acgcagcggg tccgctgaac 120
aattcggtcc gtcccacgaa agaaccagtt ttncntcttt cncacggaga acctgccgct 180
gctagagcca ctgcgatcgg tgccgatcgt ggggaaccca ctggcgaacc tgtgtttcaa 240
ccaacactta gagtgtaatt gtaaacctgg gctaggggaa accggctcta gttttttccac 300
cntctccgcc ccntgtttcg aatactccgt tcgggttgtc cccaaa     346
```

<210> 66
<211> 277
<212> DNA
<213> Mycobacterium tuberculosis

<400> 66
```
gcttccggct cgtatgttgt gtggaattgt gaccggatac caatttcaca caggaaacag 60
ctatgaccat gattacgcca agctagttag gtgacactat acaatactca agcttgccgg 120
ctggtgggcc gaccacttcg atggcacgac ccgtgaactg ctgcccggcc aattcttctt 180
ggtcgcccgg accgatggac cgcggctggg attccagaag gtgcccgatc cgcccctgg 240
gaaaaaccgc gtgcacctct acttcacgac caacgac     277
```

<210> 67
<211> 434
<212> DNA
<213> Mycobacterium tuberculosis

<400> 67
```
ccgatcgact gatgcgccga caaccacgcc ccaacaactg gaatgaaccg tcgtgaccat 60
catcagcacg cggttgtagg cgacttgcga catgttcaac ccgccgtact cggacggaat 120
cttcaaaccg aaacagccca gctcggccag gcctttcacg tactcgtcgg ggatctgggc 180
accacgctcg aggacgctgc cgtccacggt gtctaggaat tcccgcagtt tgaccagaaa 240
cgcctcggtt cgggcctcct cggcgtccga cggcttggga aatgggtgta tgagccctac 300
gggaaaccgg cccacaaaga gttctttggc gaaggacggt ttatcccaac cactttcgcg 360
agattcctcg gcaagggccc gcgcttgctc ctcggtgacc tgagtttgct gtgccatcgc 420
cgcctcctcc ctga     434
```

<210> 68
<211> 465
<212> DNA
<213> Mycobacterium tuberculosis

<400> 68
```
tgcatccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac acaggaaaca 60
gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc aagcttttac 120
ggtgatcgcg catcacctgg ttcatgaact ggaagcagcg cagcgcttcc ttttcggccg 180
caacatgagc cagcctctcg tcggcggtcg ggtgcaggtg ctcgggcagc tcggccgcga 240
cagccgcctg accctgaaac cagcttccat atcccgcgac gaacgacgcc agtccgctac 300
gtaacccctc cgcgactgtc catggacaac agcgcgttct ccaccgaccg ggcccgggtg 360
```

tggggtgttt cggcgaccgg cagccaggtg gtccacactg ccgacgggcg ccgcgagccg 420
ttcaccgacc aggccgccga gcaagtccgc ccgatcgcat actcc 465

<210> 69
<211> 463
<212> DNA
<213> Mycobacterium tuberculosis

<400> 69
gggggcgctg ctggtatagt cgctgaccgg tgcaggtttc gacaatgtgg tgccggttcg 60
gcggctacgt gccatcgaga cactggcgca ggctatcgca cccgttatcg gctacgagca 120
aatcgcggta tgcgttcttg agcatgagtc ggcgaccgtc gtcatggtcg acacccacga 180
cggaaagacg cagatcgccg tcaagcatgt gtgccgcgga ttatcaggac tgacctcctg 240
gctgaccggc atgtttggtc gcgatgcctg gcgcccggcc ggcgtggtcg tggtcggctc 300
ggatagcgag gtcagcgaat tctcgtggca gctcgaaagg gtcctgccgg tgccggtctt 360
tgcgcaaacg atggcgcagg ttacggtcgc gcggggtgcg gcctggcggc ggccagagca 420
cgagttcacc gatgcgcagc tagtggcgac agcgtcagcc aac 463

<210> 70
<211> 447
<212> DNA
<213> Mycobacterium tuberculosis

<400> 70
tgcttccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac acaggaaaca 60
gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc aagcttccgt 120
acaggtcgcc tccaacacgg cggggaagcg acaccagcct accgagcttg gagtccagga 180
cgccagcggc ggcgtcggtc tgcgtcgtgg tgccgccggg gtggcgttgg ctggcaacga 240
tctccaccca gccggtcggg ttacccacga tctcggcata gacgcgggcc gaggccggtg 300
cgataccgta ttgcgtcaat tgggacgcgg ttgtgcattc ggctagctcg gttgccacac 360
ccgtcagggg ttcgacgttg gcgggttcgg cgggccccag caccgctgtc accatgcccg 420
ccaagccgac ctgcggcgcc accaact 447

<210> 71
<211> 460
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (403)
<223> a, t, c or g

<400> 71
cggcatgacc accgacaggc ccgactggtc gtaccactcg aacgccgggg tgttgatgtc 60
ccagccgctg aagtcgtcct gcgcgcgcag gccgtcgagc aggtacaggg cgggcgagtt 120
ggcaccacca ctttggaatt ggaccttgat gtcacggccc atcgacggcg acggcacctg 180
caggtactcc accggcaagc ccggccggga aaatgccccc gcggtcgccg tgccaccgac 240
ggcgccgacc agacccgaca ctagggccgc gccgacggcc ccgaccacga gtcgacgcga 300
catacccgtg acggcgccac gaaccctgtc aacaagctgc attcttgctt ccctcatcct 360
catctcaacg catccatgca tgtttgggcg catcctgaat tangtcagac tgcaggcgct 420
gggccggcag tgctcgtgta tcaaccacaa cttcgggcgt 460

<210> 72
<211> 404
<212> DNA
<213> Mycobacterium tuberculosis

<400> 72

```
ttccaaccct aattggcttt cggccccatc cgtgaggacg gggtgcgggt gctcaacaac 60
aacgtcgtcc gcgggacaca cctctatgct gccgccatgg acgcggtcca acgcaagcag 120
ctgatcgagc tacaacccccg cgcggaacgc ttccgccgcg ggcgtgaccg catcccgttg 180
accgggcgga tcgcggtgat cgtcgatgac ggcatcgcca ccggagcgac ggccaaggcg 240
gcgtgccacg tcgcccgggc gcacggtgcg dacaaggtgg tgctggcggt cccgatcggc 300
ccaaacgaca tcgtggcgag attcgccggg tacgccgatg aggtggtgtg tctggcgacg 360
ccggcgttgt tcttcgccct cgggcagggt taccgcaact tcac            404
```

```
<210> 73
<211> 465
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (298)
<223> a, t, c or g

<400> 73
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```
caggcatgca agctttccgc cgatacccgc catgtcgcgc acatccagga cttctggggg 60
gatccgctga cagcggcggg atcccaaagt gcggatgatc gggccgccta cgtcgtggtg 120
tacctcgtcg gtaacaacga aaccgaagcg tatgactcgg tccacgcggt gcggcacatg 180
gtggacacca caccgccacc gcacggggtg aaggcctatg tcaccggtcc ggcagcactc 240
aatgccgacc aggccgaggc cggagacaaa agtatcgcta aggtcaccgc cgatcacnag 300
catggtgatc gcagcaatgt tgctagtgat ctatcgctcc gtaattaccg cggttctcgt 360
cttgatcatg gtcggcatcg actcggccaa tccgcggatt catcgccttg ctcgccgaac 420
acaacatttt cacctttcac atttgcacca acctgctctt ctcat         465
```

```
<210> 74
<211> 387
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (19)
<223> a, t, c or g

<220>
<221> modified_base
<222> (76)
<223> a, t, c or g

<220>
<221> modified_base
<222> (197)
<223> a, t, c or g

<220>
<221> modified_base
<222> (387)
<223> a, t, c or g

<400> 74
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cactactcaa gctctctcnt cattaccacc cctgtaattt gggatgggca aaaaggcgaa 60
gcaccgcttg gccacnaacg ccgggaggga caatctcggg cggctatggc ttctcccggg 120
aaggccccaa cgtacggcgt ttcaacacgt cgcgtcgccc tccgaccgcg aacattcggg 180
gattggcacc aacctgntac caccctggcc gggcgatgat ctgcagcgtc gccgcgggta 240
gtccccgccc gggcggctac agtctgaaac cccgatgacc atcgatgtgt ggatgcagca 300
tccgacgcaa cggttcctac acggcggata tgttctcctc gctgcgccgg tggaccggtg 360
ggtctatccc ctgaaaccga catcccn                              387
```

<210> 75
<211> 445
<212> DNA
<213> Mycobacterium tuberculosis

<400> 75
caggcatgca agctttcgtc agttcattgc gccagcagac caacaagagc atcgggacat 60
acggagtcaa ctacccggcc aacggtgatt tcttggccgc cgctgacggc gcgaacgacg 120
ccagcgacca cattcagcag atggccagcg cgtgccgggc cacgaggttg gtgctcggcg 180
gctactccca gggtgcggcc gtgatcgaca tcgtcaccgc cgcaccactg cccggcctcg 240
ggttcacgca gccgttgccg cccgcagcgg acgatcacat cgccgcgatc gccctgttcg 300
ggaatccctc gggccgcgct ggcgggctga tgagcgccct gacccctcaa ttcgggtcca 360
agaacatcaa cctctgcaac aacggcgacc catttgttcg dacggcaacc ggtggcaacg 420
cacctaagct acttgcccgg gatga 445

<210> 76
<211> 345
<212> DNA
<213> Mycobacterium tuberculosis

<400> 76
gtttatgcac tggttaggtg tttccatgag tttcattctg aacatccttt aatcattgct 60
ttgcgttttt ttattaaatc ttgcaattta ctgcaaagca acaacaaaat cgcaaagtca 120
tcaaaaaacc gcaaagttgt ttaaaataag agcaacacgt acacaaggag ataagaagag 180
cacataccts agtcacttat tatcactagc gcccgccgca gccgtgtaac cgagcatagc 240
gagcgaactg gcgaggaagc aaagaagaac tgttctgtca gatagctctt acgctcagcg 300
caagaagaaa tatccaccgt ggggaaaaac tccaggtaga ggtac 345

<210> 77
<211> 139
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (37)
<223> a, t, c or g

<400> 77
atactcaagc ttgggtgtag ccgatcaccg gaagtcncat gatcagccac gttccgcgcc 60
gcccggcata cggtggtgta ccgatctccg cgtcatacac ccgcgggtaa tcgccgacgg 120
tgccggttcg cgagccgaa 139

<210> 78
<211> 298
<212> DNA
<213> Mycobacterium tuberculosis

<400> 78
agctttatcg aaagcgcgaa cagctcgcgg cggcccacga cgtgctgcgt cggattgccg 60
gcggcgagat caattccagg cagctcccgg acaatgcggc tctgctggcc cgcaacgaag 120
gactcgaggt cacccccggtg cccggggtcg tggtgcacct gccgatcgca caggttggcc 180
cacaaccggc cgcttgatgc ccggtcggca agcccggcag ttgccaaacc catcgtgatc 240
aggctcggct cgcgagttcg gcgaagaaat ggttcgcctg atcacctacc atcggcca 298

<210> 79
<211> 300

<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (58)
<223> a, t, c or g

<220>
<221> modified_base
<222> (273)
<223> a, t, c or g

<400> 79
tcaacacgcc gccagccacc acgcgcgggt cgggcgccgg gcccgggcct ccaggctnct 60
ccgctcggtg atggcacgcc accgcgacac cacccggctg cgctacgtcg agccataccg 120
ggcggagcta catcggcccg gccgcccagt gttcgggccc tctcgcccag gtcgaggtcg 180
acaccgattt gcgcatccgc agccgcaccc tgcgacgaca gaaccgcggc cctacccact 240
gcttgtcggg cggggggccaa agaaccagct tgncatcctg ccacaattgg ccggcgcccg 300

<210> 80
<211> 321
<212> DNA
<213> Mycobacterium tuberculosis

<400> 80
caggcatgca agcttcacgt ccgtacggct cgggtacgct tcggtcgcag tgtgcgagtg 60
atagatgacg accgggacct cgtcggcatc ttccatagcc cgccacacct tcagttgctc 120
accggaatcc aaccggtaga aggtcggcca gcgctcggca ttggtcatcg ggatatgccg 180
ctcgggacgg tcagagccct cgggtccggc cagcactccg caggcttcgt cggggtggtc 240
gcgacgcgca tgggccacca tcgcattcac caggtctgcg cgaatcacca gcacgtagac 300
ggttcctttc ctaagcaaca c 321

<210> 81
<211> 340
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (29)
<223> a, t, c or g

<220>
<221> modified_base
<222> (164)
<223> a, t, c or g

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<400> 81
aatattcaag ctttcggcgg aaacggacnc cttgcgaaca ttgataacaa aatagaaatc 60
attgatggtt tgagtcacca ggccgatcaa gccttcgccg agccaaattc caatcaagag 120
gcccaagccc gtaccaatca gcccggcaac gagggattcc gtcnttatca gccnaaataa 180
ctgctctcgg gtaccaccca aacagcgcaa tatggcgaaa aacggtcgcc gttgcacaac 240
attaaatgtc tcggtattgt tgattaaaaa gatacccacc accagggcaa tccaactgag 300
agcggttaaa ttgaccgtaa aaacctcccg tcatctgttt 340

<210> 82
<211> 394
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (379)
<223> a, t, c or g

<400> 82
caggcatgca agcttgctgc atcttcctgt gactgctccc gaaacctggg ggtgtgcctg 60
ctgtgtatgc acggcatacg gacatccttc ccctgatacc cgcggtcgaa ccagccacgt 120
gtccatcatc aggggtcaac cccggccaag ggcgacggca cgccaagttc gccgaccgtt 180
aacctagtgc tgttagcttc atttgctgcg agcaaaacag ctggtcggcc gttaggaact 240
gaattgaaac tcaaccgatt tggtgccgcc gtaagtgtcc tgtctgcggg tgcgctggtg 300
ttgtccgcgt gtggtaacga cgacaatgtg accgggggag gtgcaaccac tggccaggcg 360
tccgcgaaag tccattgcng ggggaagaag acac 394

<210> 83
<211> 487
<212> DNA
<213> Mycobacterium tuberculosis

<400> 83
gaaagtgccc caaggtgttg gtgaaactcg ctggacggtc cccaggatgt tggcagcaca 60
ttcaccggac atgaccggag caagaccgga catcctccca taccgtcgtc gccgtgtaca 120
tccgtagccc gtcctggcag gtgctgggtt gaacaaaatc agcccaacac ctgccacgac 180
gaagaagcgg gttgcgctgg catgtcttgt cggctcggcg atcgaattct acgaattcct 240
tatctacggg accgctgcgg cgctggtgtt tcccaccgtg ttcttcccac acctggatcc 300
cacggtggcc gccgtggcct ccaaggggac atttgctgtg gcgttcctat cccggccgtt 360
cggcgcggcc gtctttggat actttggaga ccgcctcggc cgccagaaga ccctggtcgc 420
cacactgttg atcatgggcc tggcaaccgt gactgttggg ctggttccac gacagtggcc 480
atcgcgc 487

<210> 84
<211> 418
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (37)
<223> a, t, c or g

<220>
<221> modified_base
<222> (263)
<223> a, t, c or g

<400> 84
atattcaagc tttgtcacac caagtgttcc gaccaancgc tccatccggc gagtggatac 60
tcccagcagg tagcaggtcg ccaccacgct ggtcagtgcg cgttcatctc gcttgcggcg 120
ctgcagcagc cagtccggga aatagctgcc ctggcgcagc ttggggatcg cgacgtcgat 180
ggttgcggca cgggtgtcga aatcacggtg gcggtagccg ttgcgctgat tggaccgctc 240
atcgctgcgt tcgcggtagc ccncccgca cagggcgtcg gcttcagccc ccatccaagg 300
cggcgatgaa cgtcgagagc agcccgcgca gcaaatccgg gctcgcctgt gcgagttggt 360
cagccagaag ctgctcggtg tcataagatg agaagaggtc agtgcgtcct ttccttcg 418

<210> 85
<211> 399
<212> DNA
<213> Mycobacterium tuberculosis

<400> 85
caggcatgca agctttttga gcgtctcgcg gggcagcttc gccggcaatt ctactagcga 60
gaagtctggc ccgatacgga tctgaccgaa gtcgctgcgg tgcagcccac cctcattggc 120
gatggcgccg acgatggcgc ctggaccgat cttgtgccgc ttgccgacgg cgacgcggta 180
ggtggtcaag tccggtctac gcttgggcct ttgcggacgg tcccgacgct ggtcgcggtt 240
gcgccgccaa agcggcgggt cgggtgccat catgaatgcc tcaccgccgc cgcactgcac 300
ggccagtgcc ccggcgatgt cagccatcgg gacatcatgc tcgcgttcat actcctcgac 360
cagtccgcgg aacagctcca ttcccggacc gcccaacgc 399

<210> 86
<211> 474
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (71)
<223> a, t, c or g

<220>
<221> modified_base
<222> (139)
<223> a, t, c or g

<400> 86
atactcaagc ttttggctgg gtcgccttcc aattcagcgt gcaccgctat gggttgcagc 60
agcggctggc nccgcacacc ccactggccc gggtgttttc gccccgaacc cggatcatgg 120
tgagcgaaaa ggagattcnc ctgttcgatg ctgggattcg ccaccgcgag gccatcgacc 180
gattactcgc caccggggtg cgagaggtgc cgcagtcccg ctccgtcgac gtctccgacg 240
atccatccgg cttccgccgt cgggtggcgg tagccgtcga tgaaatcgct gccggccgct 300
accacaaggt gattctgtcc cgttgtgtcc aagtgccttt cgcgatcgac tttccgttga 360
cctaccggct ggggcgtcgg cacaacaccc cggtgaggtc gttttttgttg cagttgggcg 420
gaatccgtgc tctgggttac agccccgaac tcgtcacggc ggtgcgccgc cgac 474

<210> 87
<211> 383
<212> DNA
<213> Mycobacterium tuberculosis

<400> 87
caggcatgca agcttcaacc tattgacgca ttgtgcgaac tgacggcgcc cgcgcatggc 60
caatccggaa gaccatcatt ggccagtggc cgggcgctaa caggttccag ccccccacca 120
gtgccgctcg aacatgcggt gcaacccatt cgcaggccgg cagggaaagc accgcggaag 180
ccgcaaaggg ctgcagttcc gcgcccaata gtgtcgtccg caaccagatg cgctcgaaaa 240
ccgccgccgg cagtcagcgc acccgacgcg aggtcgagag acgtcgtcag cgcgcccaca 300
tggggtgcca atcggcacgg caggtaggcc gcgcgcaacc ccaacgcgtg gtgcatgcca 360
cggtccgcag gaggccacca ccc 383

<210> 88
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<220>
<221> modified_base
<222> (70)
<223> a, t, c or g

<220>
<221> modified_base
<222> (249)
<223> a, t, c or g

<400> 88
atactcaagc ttcccggccg caggtgacgg cgcggcctag cgccacttga tgccgcaccc 60
gatcgacggn cgttggtcgg ggttgactgg ccgcccggcg agcagggcgt caaccgcggc 120
ccggacgtcg gcggccgtca ccggtcggcc attgcccggg cgggagtcgt cgagctgacc 180
acggtagaca agtcggcgct ggccgtcgaa gacaaacgtg tcgggtgtgc aggccgcgga 240
gaaggcgcng gcgacgtctc gggtttcgtc gtagagatac gggaacgtcc agccgtggcg 300
gcgggcctcg gcgaccatct gatcgggccc gtcctgcggg taggtgacca cgtccttact 360
ggagataccg accatcggga ccctttgatc ggcgaggtcc cggccgaccg tggccaatcc 420
ggcggcgacg tgtcgcccgt accggccagt ggttc 455

<210> 89
<211> 429
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (18)
<223> a, t, c or g

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (88)
<223> a, t, c or g

<400> 89
caggcatgca agctttanca ncatcaaccc cgccccgcac cagcaccgac acgatgtcga 60
tgccatcgag gtgaatgtcg aactggcnca aaccatctgg cgaccgcgac caccggcaac 120
atgggtaccg gcgatttccg gtgccaatgc cgacccgacg ggccgctctc accgcaggtg 180
acctcgatca ccgagaccag ccggccgtta tactcacgca cccctaccgt gtcacgccca 240
aaacggcgct ggtggtcgat tgccggagtg caccccgcac ccagtgtcgt gcccggatcc 300
gccgaccaat cccgcaccca cgtcgccaaa cccgaaatca ccgtgatgcc gtggtaactg 360
accaccgaca gtaacgtcac tacggccgcc acgccgacgc cgaaccacca cgcacatgat 420
gatcggctg 429

<210> 90
<211> 321
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (93)..(94)
<223> a, t, c or g

<220>
<221> modified_base
<222> (96)

<223> a, t, c or g

<400> 90
atattcaacc ttgcacacat tgacgatacc ttggtcacga gaccccaaaa gctggcctcc 60
accgcgcgcc ggggaccacg gtcatacctt ganncngctt tcgatcgttg atgctgcgtc 120
ttggtccgcg gaaaccgcag gctggcatat gcacgtgggc gcactggcga tctgcgatcc 180
ccaccgattc gcccgaatac agctttcagc ggctccccaa gttgatcatc gaccggctgc 240
cggatatccc gcacttgcgg tggcgggtca ccggcgcccc gctcggactg gaccggccgt 300
ggttcgtcga ggaccacgaa c   321

<210> 91
<211> 134
<212> DNA
<213> Mycobacterium tuberculosis

<400> 91
caggcatgca agcttcatgc ccgcggcatg atagccacat gcacgcaatc gaactcagcg 60
aaaccggcgg gccaggcgtc ttacgccacc tcaccagcgc gcaacctcaa cccggccacg 120
gagacctcct gatc   134

<210> 92
<211> 513
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<400> 92
atactcaagc ttgattttga tcatcatgat gatcatcacc cgaattgtgg tagccgcagt 60
ggttatcgtg ggtaccgtcg tgctttccat gggcgcctct ttcgggcttt ccgtattggt 120
ctggcaggac attctgggta tcgagttgta ctggatggtg ttggcgatgt cggtgatcct 180
gctcntggcg gtgggatccg actacaatct gctgctgatt tcccggttga aagaggaaat 240
tggggccgga ttgaacaccg gaattatccg tgccatggct ggtaccgggg gagtggtgac 300
ggctgccggc atggtgttcg ccgttaccat gtcgttgttt gtgttcagcg atttgcgaat 360
tattggtcag atcggtacca ccatcggcct gggcttgctg ttcgacaccc tcgtcgtgcc 420
tcgttcatga aaccgtccat tgctgccctg ctgggacctg gttctggtgg ccgctacggg 480
tgcgcccgcg cccggcagtc aaatcttccg ccg   513

<210> 93
<211> 345
<212> DNA
<213> Mycobacterium tuberculosis

<400> 93
caggcatgca agcttggcgt gccgttccaa cccgaattgg ctttcggcgc catcggtgag 60
gacggcgtgc gggtgctcaa cgacgacgtc gtccgcggga cacacctcga tgctgccgcc 120
atggacgcgg tcgaacgcaa gcagctgatc gagctacaac gccgcgcgga acgcttccgc 180
cgcgggcgtg accgcatccc gttgaccggg cggatcgcgg tgatcgtcga tgacggcatc 240
gccaccggag cgacggccaa ggcggcgtgc caggtcgccc gggcgcacgg tgcggacaac 300
gtggtgctgg cggtcccat cggcccagac gacatcgtgg cgaga   345

<210> 94
<211> 302
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (283)
<223> a, t, c or g

<400> 94
atactcaagc ttttacggtg atcgcgcatc acctggttca tgaactggaa gcagcgcagc 60
gcttcctttt cggccgcaac atgagccagc ctctcgtcgg cggtcgggtg caggtgctcg 120
ggcagctcgg ccgcgacagc cgcctgaccc tgaaaccagc ttccatatcc cgcgacgaac 180
gacgccagtc cgctacgtaa cccctccgcg actgtccatg gacaacagcg cgttctccac 240
cgaccgggcc cgggtgtggg gtgtttcggc gaccggcagc cangtggtcc acactgccga 300
ag 302

<210> 95
<211> 286
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (189)
<223> a, t, c or g

<220>
<221> modified_base
<222> (191)
<223> a, t, c or g

<400> 95
tagtcgctga ccggtgcagg tttcgacnat gtggtgccgg ttcggcggct acgtgccatc 60
gagacactgg cgcaggctat cgcacccgtt atcggctacg agcaaatcgc ggtatgcgtt 120
cttgagcatg agtcggcgac cgtcgtcatg gtcgacaccc acgacggaaa gacgcagatc 180
gccgtctanc ntgtgtgccg cggattatca ggactgacct cctggctgac cggcatgttt 240
ggtcgcgatg cctggcgccc ggccggcgtg gtcgtggtcg gctcgg 286

<210> 96
<211> 482
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (400)
<223> a, t, c or g

<220>
<221> modified_base
<222> (476)
<223> a, t, c or g

<400> 96
atactcaagc tttccgccga tacccgccat gtcgcgcaca tccagaactt ctggggggat 60
ccgctgacag cggcgggatc ccaaagtgcg gatgatcggg ccgcctacgt cgtggtgtac 120
ctcgtcggta acaacgaaac cgaagcgtat gactcggtcc acgcggtgcg gcacatggtg 180
gacaccacac cgccaccgca cgggggtgaag gcctatgtca ccggtccggc agcactcaat 240
gccgaccagg ccgaggccgg agacaaaagt atcgctaagg tcaccgcgat cacgagcatg 300

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gtgatcgcag caatgttgct agtgatctat cgccccgtaa ttaccgcggt tctcgtcttg 360
atcatggtcg gcatcgacct cggcgcaatc cgcggattcn tcgccttgct cgccgaccac 420
aacattttca gcctttcaac atttgcgaca acctgctcgt tctcatggcg attgcngcga 480
ac                                                                 482


<210> 97
<211> 395
<212> DNA
<213> Mycobacterium tuberculosis

<400> 97
caggcatgca agcttggcgt gccgttccaa cccgaattgg ctttcggcgc catcggtgag 60
gacggcgtgc gggtgctcaa cgacgacgtc gtccgctgga cacacctcga tgctgccgcc 120
atggacgcgg tcgaacgcaa gcagctgatc gagctacaac gccgcgcgga acgcttccgc 180
cgcgggcgtg accgcatccc gttgaccggg cggatcgcgg tgatcgtcga tgacggcatc 240
gccaccggag cgacggccaa ggcggcgtgc caggtcgccc gggcgcacgg tgcggacaag 300
gtggtgctgg cggtcccgat cggcccagac gacatcgtgg cgagattcgc cgggtacgcc 360
gatgaagtgg tgttgtttgg cgacccggcg ttgtt                             395


<210> 98
<211> 439
<212> DNA
<213> Mycobacterium tuberculosis

<400> 98
atactcaagc tttggcattg tgcacatttt ccacccgtgc tctattaatg ctgagccgct 60
aattgtgacc ccagtcggga aacacgcgga gcaccaaatt caccgcagcg gccggggcgg 120
ttcaactcac catggatcgc tctcgtcgtc tggtgctgga caatcgtcgc tgtagcgcgt 180
cgcgaacacc tcagcttctg ctgccgcggc ttcttccggc gatggtaacc cccaggtttc 240
gcccacggtc ttacgtagca gtgcgacgcg gtgttcatct gcatcgacct gttgactcat 300
cctgtcaagg atgaaggcgt actgggccga ctgcgccttc tgccgcgcca ggtcggcaat 360
caccaggatc tcagaaacga gctgcgactc actcttccag gccaccctgg ccgaaagctc 420
gacatggtca atccggccg                                               439


<210> 99
<211> 348
<212> DNA
<213> Mycobacterium tuberculosis

<400> 99
caggcatgca agcttgcggg ccggagtggt ttcgacggcc gctcgcttct cggcatcggt 60
ttgggctgtc accagcagtt ggtagttctt cacgtactgt tgttcgagcg tcgagccgcc 120
gcgcgtgtcg aggtcgccgg acgcgtatcc cgccaggccg tcagggtgc ccttccagtc 180
cacgccgctg tggtcggcga accgcttatc ttcaatcgag acgatcgcca gcttcatcgt 240
gttggcgatc ttgtccgagg cacctcgaa ccggcgctgc gagtacagcc acgcgatcgt 300
gttgcccttc gcgtcgacca tcgtcgatac cgcaggcact tgcccctc                348


<210> 100
<211> 436
<212> DNA
<213> Mycobacterium tuberculosis

<400> 100
atactcaagc ttccccggcgg ccagtaccga aagcgcgaac agctcgcggc agcccacgac 60
gtgctgcgtc ggattgccgg cggcgaaatc aattccaggc agctcccgga caatgcggct 120
ctgctggccc gcaacgaagg actcgaggtc accccggtgc ccgggggtcgt ggtgcacctg 180
ccgatcgcac aggttggccc acaaccggcc gcttgatgcc cggtcggcaa gcccggcagt 240
tgccaaaccc agcgtgatca ggctcggctc gcgagttcgg cgaagaagtg ctcgcctga 300
tcacctacca tcggccagga tctgcgtgtc atcacaacgc tcgccaagga ggttgttgtg 360
```

gtgctatcga cggcctttag ccagatgttc ggaatcgact atccgatagt gtccgcgcca 420
atggacttga tcgccg   436

<210> 101
<211> 445
<212> DNA
<213> Mycobacterium tuberculosis

<400> 101
agcttcggtg tagccgatca ccggaagccg catgatcagc cacgtttcgc gccgcccggc 60
atacggcggc gtaccgatct ccgcgtcata cacccgcggg taatcgccga cggtgccggt 120
tcgcgagccg aaggtgacga cgctgattga atcgagttcc aggtccagcg ggtggcgcag 180
caacggcgcg agctcaacga cgtcaatcac gttgtcgctt tctacggtca ccgacccggt 240
gaccgtagtc gcccggtgcg ctcggccgag aagttgcacc gccaccaccg cgacaccgtc 300
ttgcacgcgg acgccacccc cggatcggtt gttggccaag gtaattgggt cattccattt 360
gacgggacgc cgaccccgca gccccagtac cgcccacgac cacgccggct gacccaccac 420
tgtacgaaca ccaaggcgac gccga   445

<210> 102
<211> 261
<212> DNA
<213> Mycobacterium tuberculosis

<400> 102
atactcaagc ttcggtggct tcgcccgccc tgccgggtgg acttcatgac aacgcggggg 60
cgattacccc cgctaccgcc agcagcatga cggcggtacc taacaccgcc cggatgcctc 120
gcacgtgcct cgatgtgctc acggaatcgc cccggcaccg cgatctcgag gatcaccagc 180
gttacccccg gcagcgcgac accgacaatt ccgtacaccg ccacgccgat ccggccctgg 240
gccagctgat tggagctggc g   261

<210> 103
<211> 244
<212> DNA
<213> Mycobacterium tuberculosis

<400> 103
caggcatgca agcttccaca tgtacggatc cacgaacatc ccgttgaact gacaggtgcg 60
gcccggctcg atcaggccgg ccacttgttc tacgcggtta ccgaagatct cttcggtgac 120
ctgcccgccg ccggccagct cggcccagtg cccggcgttg ccgccgcgg cgacgatctt 180
ggcgtccacg gtggtccggg tcttgcccgc tagcacgatc cgcgagtcgg ccggtcaccc 240
gggt   244

<210> 104
<211> 376
<212> DNA
<213> Mycobacterium tuberculosis

<400> 104
atactcaagc tttccaagtc ccaagtgtcg atcatggcca aagagctcga caaagccgta 60
gaggcgtttc ggacccgccc gctcgatgcc ggcccgtata ccttcctcgc cgccgacgcc 120
ctggtgctca aggtgcgcga ggcaggccgc gtcgtcgggg tgcacacctt gatcgccacc 180
ggcgtcaacg ccgagggcta ccgaaagatc ctgggcatcc aggtcacctc cgccgaagac 240
ggggccggct ggctggcgtt cttccgcgac ctggtcgccc gcggcctgtc cggggtcgcg 300
ctggtcacca gcgacgccca cgccggcctg gtggccgcga tcggggccac cctgcccgca 360
gcggcctggc agcgct   376

<210> 105
<211> 284

<212> DNA
<213> Mycobacterium tuberculosis

<400> 105
caggcatgca agcttcacac gtaggcgccg tcgataaatg actccgccgc gcttcgcaca 60
tcctcgtagc gatccttggc gagcaggtca accgggcgct gcccgtcgag gagccggttt 120
ttggcgtgca gccactggcc gacacctcgg ggggtaagcg aatccgagag caggaggacg 180
aggtcacgaa gctgcgccag ccggtcgtac cgctcagggc ggatgtcgcc ggtccgccac 240
ccgcgtaccg cccgatcgga cacctgtatg accgcggcga cgtc 284

<210> 106
<211> 140
<212> DNA
<213> Mycobacterium tuberculosis

<400> 106
cgcggcggcg cattacccccc gctaccgtca gcagcttgac ggcggtagcg aacaccgccg 60
gatgcagcgc aggtgcgtct atgtgcacac ggaatcgccc cggcaccgcg atctcgagga 120
tcaccagtgc ccgcccccctg 140

<210> 107
<211> 491
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (459)
<223> a, t, c or g

<400> 107
gggatcgagg aacagcgcgt tgaactgata ggtgcggccc ggctcgagca ggccggccat 60
ttgttcgatg cggttaccga agatctcttc ggtgacctgc ccgccgccgg ccagctcggc 120
ccagtgcccg gcgttggccg ccgcggcgac gatcttggcg tccacggtgg tcggggtcat 180
gcccgcgagc aggatcggcg agcggccggt cagccgggtg aacttcgtcg agagcttgac 240
cctgccgtcg gggaggcgaa ccacggtcgg tgcgtatctc gaccaggccc gggcaacctc 300
gggggtggcg ccgacggtga acaggttgcg ctggccaccg cgggtagccg ccggcactat 360
gccgatgccc aggccgcgga tcaccggtgc ggtcagtcgg gtcaggatgt cgcccggccc 420
caggtcgaag atccagcggg cgccggccgc gtggacacng gtgatctcgt ccaccatcga 480
ctttctgatc a 491

<210> 108
<211> 364
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (350)
<223> a, t, c or g

<220>
<221> modified_base
<222> (355)
<223> a, t, c or g

<400> 108
taactcaagg cttgcgttga ggccccaggc ccatcgacgg tttggcggcc ttaaatgcac 60
tgaggtcgtc aattgacccc acagcggaaa tgccgactat tcgcaggcct ccttcgcctt 120
ggctgccgga gagggctcc gcgggaaccg catgcaggta tatgacctcg gtttctcggg 180

```
tgctaccgcg tgccttgtcg aggatgaact cggcgttgga attgtccagc cggcccaatt 240
catcgagcgc agattcgtac acatggccgg cggcgacata cgcttcaccg tggatctgct 300
ccacacggac cgccctgtcg ggatcctgct cacgggtaaa ggaacttacn tggcnctcgg 360
tgcc                                                              364
```

```
<210> 109
<211> 453
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 109
ccttctgcgc cacccacacc gtcaacgccc gcgaagtcga cgtcgtccag gccatcggcg 60
gcctcacgga tggattcggc gcggacgtgg tgatcgacgc cgtcggccga ccggaaacct 120
accagcaggc cttctacgcc cgcgatctcg ccggaaccgt tgtgctggtg ggtgtgccga 180
cgcccgacat gcgcctggac atgccgctgg tcgacttctt ctctcacggc ggtgcgctga 240
agtcgtcgtg gtacggcgat tgcctgcccg aaagcgactt ccccacgctg atcgaccttg 300
acctgcatgg ccggctgccg ctgcagcggt tcgtttccga acgcatcggg ctcgaagacg 360
tcgaggaggc gttccacaag atgcatggcg gcaaggtatt gcgttcggtg gtgatgttgt 420
gatggccgcc atcgagcgcg tcatcaccca cgg                              453
```

```
<210> 110
<211> 329
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 110
atactcaagc ttgattttga tcatcatgat gatcatcacc cgaagtgtgg tagccgcagt 60
ggttatcgtg ggtaccgtcg tgctttccat gggcgcctct ttcgggcttt ccgtattggt 120
ctggcaggac attctgggta tcgagttgta ctggatggtg ttggcgatgt cggtgatcct 180
gctcctggcg gtgggatccg actacaatct gctgctgatt tcccggttga aaaaagaaat 240
tggggccgga ttgaacaccg gaattatccg tgccatggct ggtaccgggg gagtggttac 300
cgctgccggc atggtgttcg ccgttacca                                   329
```

```
<210> 111
<211> 438
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (5)
<223> a, t, c or g
```

```
<400> 111
attgnctttc ggcgccatcg gtgaggacgg cgtgcgggtg ctcaacgacg acgtcgtccg 60
cgggacacac ctcgatgctg ccgccatgga cgcggtcgaa cgcaagcagc tgatcgagct 120
acaacgccgc gcggaacgct tccgccgcgg gcgtgaccgc atcccgttga ccgggcggat 180
cgcggtgatc gtcgatgacg gcatcgccac cggagcgacg gccaaggcgg cgtgccaggt 240
cgcccgggcg cacggtgcgg acaaggtggt gctggcggtc ccgatcggcc agacgacat 300
cgtggcgaga ttcgccgggt acgccgatga ggtggtgtgt ttggcgacgc cggcgttgtt 360
cttcgccgtc gggcagggtt accgcaactt cacccagacc tccgacgaag aagtggtggc 420
gttttctgga tcgtgctc                                              438
```

```
<210> 112
<211> 438
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
```

<221> modified_base
<222> (367)
<223> a, t, c or g

<400> 112
atactcaagc ttttcccgtc cgtcatcgcc caagcgcgtg aggccgaagc ggctggttac 60
gactccctgt ttgtgatgga ccacttctac caactgccca tgttggggac gcccgaccag 120
ccgatgctgg aggcctacac ggcccttggt gcgctggcca cggcgaccga gcggctgcaa 180
ctgggcgcgt tggtgaccgg caatacctac cgcagcccga ccctgctggc aaagatcatc 240
accacgctcg acgtggttag cgccggtcga gcgatcctcg gcattggagc cggttggttt 300
gagctggaac accgccagct cggcttcgag ttcggcactt tcagtgaccg gttcaaccgg 360
ctcgaanagg cgctacagat cctcgagcca atggtcaagg gtgagcgcca acgtttttcg 420
gcgattggta cccaccga 438

<210> 113
<211> 482
<212> DNA
<213> Mycobacterium tuberculosis

<400> 113
cggccaccgg ggccactccg cacaatctgt acccgaccaa gatctacacc atcgaatacg 60
acggcgtcgc cgactttccg cggtacccgc tcaactttgt gtcgaccctc aacgccattg 120
ccggcaccta ctacgtgcac tccaactact tcatcctgac gccggaacaa attgacgcag 180
cggttccgct gaccaatacg gtcggtccca cgatgaccca gtactacatc attcgcacgg 240
agaacctgcc gctgctagag ccactgcgat cggtgccgat cgtggggaac ccactggcga 300
acctggttca accaaacttg aaggtgattg ttaacctggg ctacggcgac ccggcctatg 360
gttattcgac ctcgccgccc aatgttgcga ctccgttcgg gttgttccca gaggtcagcc 420
cggtcgtcat cgccgacgct ctcgtcgccg ggaccagcag ggaatcggcg atttcgccta 480
ca 482

<210> 114
<211> 388
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (172)
<223> a, t, c or g

<220>
<221> modified_base
<222> (350)
<223> a, t, c or g

<220>
<221> modified_base
<222> (355)
<223> a, t, c or g

<220>
<221> modified_base
<222> (369)
<223> a, t, c or g

<400> 114
atactcaagc ttggggtggc gctgtcggtc ggtgtgcttg gcggcgtcgg tatcaacacc 60
gcccacgaaa tggggcacaa gaaggattcg ctggagcggt ggctgtccaa aatcaccctc 120
gcccagacct gctacgggca cttctacatc gagcacaacc gtggccatca cntccgggtg 180
tccacaccgg aggacccggc gtcggcgcgg ttcggcgaaa cgttgtggga gttcctgccc 240
cgcagtgtta tcggcggctt gcgctcggcc gttcatttgg aggcccaacg gctgcgtcgg 300

```
ctcggcgtca gcccctggaa tcccatgacg tatctgcgca acgacgtgcn caacncgtgg 360
ctgatgtcng tggtgttgtg gggtgggc                                    388
```


```
<210> 115
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 115
tcgccaccgc accgcggcga acgctcaaag gcacctactg gcaccaaggc cccacacgtc 60
accctgtgac ctcctgcgcc gaccccgccc gaggtcctgg ccgttaccac cgaacgggcg 120
agccgggagt ctggtacgca tcgaacaaag agcaaggtgc atgggcggag ttgttccgcc 180
acttcgtcga tgacggggtc gatccattcg aggtccgtcg ccgcgtcggt cgagtggcgg 240
tcacactcca ggtactcgac ctcacagacg agaggactcg atcccatcta ggtgtggacg 300
aaacagatct tctgtccgac gactacacca ccacccaggc catcgccgcc gcccgcgatg 360
ccaacttcga cgccgtactg gccccggcgg cggcgctccc cggttgtcaa acactttgcc 420
gtgttcgttc acgcactgcc caacatcgag cccga                            455
```


```
<210> 116
<211> 328
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 116
atgaaataag aagagcacat ccctcagtcg gttatcatca ctagcgctcg ccgcacccgt 60
gtaaccgatc atagcgagcg aactggcgag gaagcaaaga atatctgttc tgtcagatag 120
ctcttacgct cagcgcaaga agaaatatcc cccgcgggaa caactccagg tagaggtaca 180
cacgcggata gccaattcag agtaataaac tgtgacactc acaccctcat caatgatgac 240
gaactacacc ccgatatccg gtcacatgac gaagggaaag agaaggatat catctgtgac 300
aaactgccct caaatttggc ttccttaa                                    328
```


```
<210> 117
<211> 318
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 117
atactcaagc ttgtcgaact ccttcttgaa taccggccgg ccatccacag atgcccggaa 60
gaacttccag gtacccatgg cggctggatc agggggcggc acagttggtc ttgtcctgcc 120
tcgagtggcg tcgttgtccg gcttggacgg ggctccgacg gtaccggagg gcagcgacaa 180
aacacttatg cacttgggcg acccgccgag acggtgcgac acccatcccg acggcacaag 240
ctcagccgcg gccgctcttg ttcttcgtcg gatcgacatt cacccacttc tgaccgggct 300
tgggcgaagg aagcagaa                                               318
```


```
<210> 118
<211> 405
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 118
ggtatagtcg ctgaccggtg caggtttcga caatgtggtg ccggttcggc ggctacgtgc 60
catcgagaca ctggcgcagg ctatcgcacc cgttatcggc tacgagcaaa tcgcggtatg 120
cgttcttgag catgagtcgg cgaccgtcgt catggtcgac acccacgacg gaaagacgca 180
gatcgccgtc aagcatgtgt gccgcggatt atcaggactg acctcctggc tgaccggcat 240
gtttggtcgc gatgcctggc gcccggccgg cgtggtcgtg gtcggctcgg atagcgaggt 300
cagcgaattc tcgtggcagc tcgaaagggt cctgccggtg ccggtctttg cgcaaacgat 360
ggcgcaggtt acggtcgcgc ggggtgcggc cctggcggcg gccca                 405
```

<210> 119
<211> 89
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (11)
<223> a, t, c or g

<220>
<221> modified_base
<222> (78)
<223> a, t, c or g

<220>
<221> modified_base
<222> (83)
<223> a, t, c or g

<400> 119
gacactatat natactcaag cttcaggtca atgtgcgcca agccctgacg ctggccgacc 60
aggccaccgc cgccggancc ctntctaga   89

<210> 120
<211> 354
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (110)
<223> a, t, c or g

<220>
<221> modified_base
<222> (238)
<223> a, t, c or g

<220>
<221> modified_base
<222> (242)
<223> a, t, c or g

<400> 120
ctgtagccac ctgttgccat ccccgtcatg cccgactctg gtcatctcgg atccgctgac 60
accccgctaa ggctgctcct ctcggtgcat tacctcaccg acggcgaacn cccccagctt 120
tacgactatc cggatgacgg cacctggttg ccggctaact tcaccgtcag cttggacggc 180
ggcgctaccg tcgatggcgc cagcggggcg atggccgggc ccggcgaccg attcgtcntc 240
ancctgtcgc gtgaacttgc cgacgtcatc gtggtcggtg tgggcaccgt gcgcattgag 300
ggctactccg cgtccggat gggtgtcgtc aagcgcccgc accggcaggc ccga   354

<210> 121
<211> 379
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (170)
<223> a, t, c or g

<400> 121
atactcaagc ttcgcacgct cggcgcgcgc ggtaccgccc aggtcgccca acagatcgtc 60
gatgttcgcg tcgtccgcct cgcgcacgtg gtctgtcacc agtcaacgtt aacgccgccg 120
cacatgtcct gcggccgggc aaaaacgtga aaaacgagcg ggcgactgcn atgtcatgac 180
accgacggcc gccgatgggc ccagggtctg gcaaattcga tctgtgcggc cagtgccagc 240
agcgtcgcct cgtcatacgg ccggccgacg agttgaaccg acatgggcag gccgtcgccg 300
tcgaagtccc acggcaccac gggcgcgggc tggccggtca gattccaaaa ttgaaagtac 360
ggaaccgctg caccaccaa 379

<210> 122
<211> 393
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (370)
<223> a, t, c or g

<400> 122
atcgtttcga ccaggcgctc catccggcga gtggatactc ccagcaggta gcaggtcgcc 60
accacgctgg tcagtgcgcg ttcagctcgc ttgcggcgct gcagcagcca gtccgggaaa 120
tagctgccct ggcgcagctt ggggatcgcg acgtcgatgg ttgcggcacg ggtgtcgaaa 180
tcacggtggc ggtagccgtt gcgctgattg gaccgctcat cgctgcgttc gcggtagccc 240
gccccgcaca gggcgtcggc ttcagccccc atcaaggcgg cgatgaacgt cgagagcagc 300
ccgcgcagca gatccgggct cgcctgtgcg agttggtcag ccagaagctg ctcggtgtcg 360
ataagatgan aagaagtcat tgcgttattt cct 393

<210> 123
<211> 333
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (206)
<223> a, t, c or g

<400> 123
atactcaagc ttgggtgttg ccgatcaccg gaagccgcat gatcagccac gtttcgcgcc 60
gcccggcata cggcggcgta ccgatctccg cgtcatacac ccgcgggtaa tcgccgacgg 120
tgccggttcg cgagccgaag gtgacgacgc tgattgaatc gagttccagg tccagcgggt 180
ggcgcagcaa cggcgcgagc tcaacnacgt caatcacgtt gtcgctttct acggtcaccg 240
acccggtgac cgtagtcgcc cggtgcgctc ggccgagaag ttgcaccgcc accaccgcga 300
caacgtcttg cacgcggacg ccacccccccg gat 333

<210> 124
<211> 426
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (5)
<223> a, t, c or g

<220>
<221> modified_base
<222> (424)

<223> a, t, c or g

<400> 124
```
gcgcnaacag ctcgcggcag cccacgacgt gctgcgtcgg attgccggcg gcgagatcaa 60
ttccaggcag ctcccggaca atgcggctct gctggcccgc aacgaaggac tcgaggtcac 120
cccggtgccc ggggtcgtgg tgcacctgcc gatcgcacag gttggcccac aaccggccgc 180
ttgatgcccg gtcggcaagc ccggcagttg ccaaacccag cgtgatcagg ctcggctcgc 240
gagttcggcg aaaaagtggc tcgcctgatc acctaccatc ggccaggatc tgcgtgtcat 300
cacgacgctc gccaaggagg ttgttgtggt gctatcgacg gcctttagcc agatgttcgg 360
aatcgactat ccgatagtgt ccgcgccaat ggacttgatc gccggcggtg agctggctgc 420
cgcngt                                                             426
```

<210> 125
<211> 336
<212> DNA
<213> Mycobacterium tuberculosis

<400> 125
```
atactcaagc tttctccgat acccgccatg tcgcgcacat ccaggacttc tgggggggatc 60
cgctgacagc ggcgggatcc caaagtgcgg atgatcgggc cgcctacgtc gtggtgtacc 120
tcgtcggtaa caacgaaacc gaagcgtatg actcggtcca cgcggtgcgg cacatggtgg 180
acaccacacc gccaccgcac ggggtgaagg cctatgtcac cggtccggca gcactcaatg 240
ccgaccaggc cgaggccgga aacaaaagta tcgctaaggt caccgcgatc acgaacatgg 300
tgatcgcagc aatgttgcta gtgatctatc gctccg                            336
```

<210> 126
<211> 347
<212> DNA
<213> Mycobacterium tuberculosis

<400> 126
```
ccatgagcac cgccagccga gcacgaggcc aaactccgcc gacgcaggcc ggttggactt 60
gtcgtgctgg acaagggggtt tagccgccga agcagtgacg tacatcggcg aagagcagtt 120
cgcctgtcga ccgacggcgc aaaccgtgag gctagggaag cgaggagcac atggccgccg 180
acccgcaatg tacacgctgc aagcaaacca tcgaacccgg atggctatac atcaccgccc 240
atcgccgcgg tcaagccggg atcgtcgatg acggcgcagt actgattcac gtgcccggtg 300
aatgccgcac cccggggagc actttccgcc aaaactaacc cggttgg               347
```

<210> 127
<211> 315
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (129)
<223> a, t, c or g

<220>
<221> modified_base
<222> (153)
<223> a, t, c or g

<220>
<221> modified_base
<222> (186)
<223> a, t, c or g

<220>
<221> modified_base

<222> (231)
<223> a, t, c or g

<220>
<221> modified_base
<222> (258)
<223> a, t, c or g

<220>
<221> modified_base
<222> (298)
<223> a, t, c or g

<400> 127
cgggtgtcat tggccaccgg cggcggctgt ccgggaaatg gcgggtcccc ggtggttttg 60
ctgaggagtg ctgaaccgta gtcgaagtgg gcggcgtcag actccaccca gccagcaggc 120
agcgcgaanc tgaatcctcc aaccgggttg tcnatccgga caggttgggg tgcgtttggg 180
gcaatnacag gtggcggcgg tgcgttcggg tcggccggcg gaggtgctgc nttgggatcc 240
ccggctgggc attcggcntg ttggcggcgg ccggtggtgg gggggcaac acgtgtcncc 300
ggtgcgggtg gccct 315

<210> 128
<211> 354
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (135)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<400> 128
ccaagatcta caccatcgaa tacgacggcg tcgccgactt ccgcggtac ccgctcaact 60
ttgtgtcgac cctcaacgcc attgccggca cctactacgt gcactccaac tacttcatcc 120
tgacgccgga acaanttgac gcagcggttc cgctgaccaa tacggtcggt cccacgatga 180
cccagtacta catcattcgc acggagaacc tgccgctgct agagccactg cgatcggtgc 240
cgatcgtggg ganacccact ggcgaacctg ggttcaacca aacttgaagg tgattgttaa 300
cctgggctac ggcgacccgg cctatggtta ttcgacctcg ccgcccaaat gttg 354

<210> 129
<211> 360
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (55)
<223> a, t, c or g

<220>
<221> modified_base
<222> (224)
<223> a, t, c or g

<400> 129
agcttcccga gttcggcttt ggatcaagac cccagtccgc gggcgcgatc cggcngctcg 60

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gtgactacat caagccacaa atcgacggct ttcggggtgc cgataccgat gacgtggcgg 120
atgtcgagtg ttgagttctc ggcggggcgg atgctcacct ggcgatcacc tgcctctcgt 180
tgacgatcga tcgtctatgc cgccgtctct gcgggaacag gccnccagta catcgccaca 240
gacgggatcc accgcattt cggctacggt tgctcgtttc ggtgttcgga ctagtcggtc 300
ctggtgacgt gccggtgatg cggaccggtc ctagcactga ccaatggcca aaatgcgggc 360
```

```
<210> 130
<211> 483
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 130
cggggggcct cttaatagtg taggaaagaa gctctacata ttcaggagga ttcaccatgg 60
ctcgtgcggt cgggatcgac ctcgggacca ccaactccgt cgtctcggtt ctggaaggtg 120
gcgacccggt cgtcgtcgcc aactccgagg gctccaggac caccccgtca attgtcgcgt 180
tcgcccgcaa cggtgaggtg ctggtctgcc agcccgccaa gaaccaggca gtgaccaacg 240
tcgatcgcac cgtgcgctcg gtcaagcgac acatgggcag cgactggtcc atagagattg 300
acggcaagaa atacaccgcg ccggagatca gcgcccgcat tctgatgaag ctgaagcgcg 360
acgccgaggc ctacctcggt gaggacatta ccgacgcggt tatcacgacg cccgcctact 420
tcaatgacgc ccagcgtcag gccaccaagg acccggccag atcgccggtc tcacgtgctg 480
cgg                                                                  483
```

```
<210> 131
<211> 423
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 131
atactcaagc ttcataacag gcctgttgtg ggcgcacccg gctcgccgag ttctgcacgc 60
accgcctcaa gtgcggcccg caccgccggc atctcccggt cacgcagggc cgcggcccgc 120
gccgcagcga cggcgtgttc gcgcagttcg ccgtcaatga tgctgacctg atcggccacc 180
cgggcgttct cggcgtcttc gcgttcacta atcgcggtgc tcagcagcgt ctcgacagcc 240
accacccgag tggcgaccag ctgctccacc acggaccgca gcgatgccgt cacctcaccc 300
gtccagcggt ccaccacgac acggtcgtgc accagcgcgc gggcattcac cacccaggcg 360
gtcaccgcca ggccgatcgc cacacccgcc accatccccg atgcagccag gccgggagta 420
aga                                                                  423
```

```
<210> 132
<211> 338
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (255)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (289)
<223> a, t, c or g
```

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<400> 132
ctggtgctgg acggagccta gtacaacttc ctctccaatg ctcttgcccc gatcgcggcg 60
accaggatga cccaggacat cctgccgccc gaagtactgg aaaagctcac acccgagttc 120
gtcgcaccgg tggtggccta cctgtgcacc gaggagtgtg ccgacaaccc atcggtgtac 180
gtcgtcagtg gtggttaggt gcagcgagtt gcgctgtttg caacgacgg cgccaacttc 240
gacaaaccgc cgtcngtaca agatgttgcg gcgcggtggg ccgagatcnc cgatctgtcc 300
ggtgcgaaaa ttgctggatt caagttgtag aactaaat                           338
```

<210> 133
<211> 173
<212> DNA
<213> Mycobacterium tuberculosis

<400> 133
atactcaagc ttttccggcg tcgtccacct gacccaaaaa gcgcaggtgc gccgccaaac 60
ggcccgcctg gccgcgcaac tggtcggcgt cgccgtggcc gacaatcagt agctggacat 120
ccggaaaccg ctgcaccacc ttcggcagcg cgtcaagcaa aaacggccat tcc 173

<210> 134
<211> 255
<212> DNA
<213> Mycobacterium tuberculosis

<400> 134
tttcagatct catttttatg acatgactgg agatctgtct agattgcagc tcctgtgagc 60
gtgggtaccg gattcaagcc ggtcggtcac gccgcggtgg taccggcttt gcggcagtgc 120
tcggcctcga gttcggcgat cgcgcgcgaa gtgcgtttcg cgcaccaaga tcgcggccta 180
atggccggcg atgaccgcga tgaccagcgc gatccaggaa aaaccgttcc aaccagtgct 240
gggcggccat ccccg 255

<210> 135
<211> 285
<212> DNA
<213> Mycobacterium tuberculosis

<400> 135
atactcaagc ttcccgacca caagttgaac agcaccgatt tcggcgagca cttcgtcaac 60
ttccagggtg cccgcaccaa gtatttcgac aagtatttcc gtcgggccgc cgccgccggc 120
gcgcggcagg tggtcatcct ggcggcgggg ctggactccc gcgcgtaccg gctgccttgg 180
cccgacggga ccacggtttt tgagctggac cgcccgcagg tccttgattt caagcgcgag 240
gtgctcgcca gccacggtgc ccaaccgcgc gccctgcgcc cgcga 285

<210> 136
<211> 494
<212> DNA
<213> Mycobacterium tuberculosis

<400> 136
gtgtgctgtc aattcagagc tgagcctgat gcactcaact tactgagcat gctaacgctg 60
gtcgtgcggg tcttgttccc gcgtgtcggc agggcacacg ctcggggcgt agctgggaga 120
ggccccggtc aagcccggag agcagtgctc agtccgccag cttgaccgac tttcgatgag 180
aacgcgcttc tcgccgtatt gaactggcgt gctgacggtc gctgagcagc gctcgccgag 240
tgcggccgct gattctttca tcgagccagg aggcgcattc gtgttcggcc gcctgcgggt 300
cggccccatc gtcgacgcga tccgtcaccc actcctcgat caggtctgcc tcatcgaacg 360
ggccaacggt gctgtcggag tatgtgtgcg tgggcacggc gagccgggtg ctgtggtaca 420
cccaccgttg catgaccaag ttgacgcctg actggctgag caccgcgatc cgctcacagg 480
tcggaacgtt ggtg 494

<210> 137
<211> 357
<212> DNA
<213> Mycobacterium tuberculosis

<400> 137
atactcaagc ttttggtcta gccggccgag cccgatacag gtgtcattgg ccaccggcgg 60
cggctgtccg ggaaatggcg ggtccccggt ggttttgctg aggagtgctg aaccgtatgc 120

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gaagtgggcg gcgtcagact ccacccagcc agcaggcagc gcgaaactga atcctccaac 180
cgggttgtcg atccggacag gttggggtgc gtttggggca atgacaggtg gcggcggtgc 240
gtccgggtcg gccggcggaa gtgctgcgtt gggatcgccc ggctgggcat tctgcgtgtt 300
ggcggcggcc ggtggtgggg gggcaacagg tgtctccggt gcgggtggcg ctgcacc    357
```

<210> 138
<211> 458
<212> DNA
<213> Mycobacterium tuberculosis

<400> 138
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ggggccactc cgcacaatct gtacccgacc aagatctaca ccatcgaata cgacggcgtc 60
gccgactttc cgcggtaccc gctcaacttt gtgtcgaccc tcaacgccat tgccggcacc 120
tactacgtgc actccaacta cttcatcctg acgccggaac aaattgacgc agcggttccg 180
ctgaccaata cggtcggtcc cacgatgacc cagtactaca tcattcgcac ggagaacctg 240
ccgctgctag agccactgcg atcggtgccg atcgtgggga acccactggc gaacctggtt 300
caaccaaact tgaaggtgat tgttaacctg ggctacggcg acccggccta tggttattcg 360
acctcgccgc ccaatgttgc gactccgttc gggttgttcc cagaggtcag cccggtcgtc 420
atcgccgacg ctctcgtcgc cgggacccag cacggaat                        458
```

<210> 139
<211> 595
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (5)
<223> a, t, c or g

<220>
<221> modified_base
<222> (13)..(14)
<223> a, t, c or g

<220>
<221> modified_base
<222> (21)..(23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (36)
<223> a, t, c or g

<220>
<221> modified_base
<222> (42)
<223> a, t, c or g

<220>
<221> modified_base
<222> (57)
<223> a, t, c or g

<220>

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<222> (72)
<223> a, t, c or g

<220>
<221> modified_base
<222> (76)
<223> a, t, c or g

<220>
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<222> (218)
<223> a, t, c or g

<220>
<221> modified_base
<222> (301)
<223> a, t, c or g

<220>
<221> modified_base
<222> (328)
<223> a, t, c or g

<220>
<221> modified_base
<222> (337)
<223> a, t, c or g

<220>
<221> modified_base
<222> (405)
<223> a, t, c or g

<220>
<221> modified_base
<222> (408)
<223> a, t, c or g

<220>
<221> modified_base
<222> (413)
<223> a, t, c or g

<220>
<221> modified_base
<222> (468)
<223> a, t, c or g

<220>
<221> modified_base
<222> (483)
<223> a, t, c or g

<220>
<221> modified_base
<222> (491)
<223> a, t, c or g

<220>
<221> modified_base
<222> (493)
<223> a, t, c or g
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<220>
<221> modified_base
<222> (498)
<223> a, t, c or g

<220>
<221> modified_base
<222> (525)
<223> a, t, c or g

<220>
<221> modified_base
<222> (533)
<223> a, t, c or g

<220>
<221> modified_base
<222> (539)
<223> a, t, c or g

<220>
<221> modified_base
<222> (546)
<223> a, t, c or g

<220>
<221> modified_base
<222> (573)
<223> a, t, c or g

<220>
<221> modified_base
<222> (577)
<223> a, t, c or g

<220>
<221> modified_base
<222> (580)
<223> a, t, c or g

<220>
<221> modified_base
<222> (589)
<223> a, t, c or g

<400> 139
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gctcaaaggc gntacnggca ccaaggcccc acacgtcacc ctgtgacctc ctgcgccgac 120
cccgcccgag gtcctggccg ttaccactga acgggcgagc cgggagtctg gtacgcatcg 180
aacaaagagc aaggtgcatg ggcggagttg ttccgccnct tttttttatga cggggtcgat 240
ccattcgagg tccgtcgccg cgtcggtcga gtggcggtca cactccaggt actcgacctc 300
ncagacgaga ggactcgatc ccatctangt gtggacnaaa cagatcttct gtccgacgac 360
tacacaccac ccaggccatc gccgccgccc gcgatgccaa cttcacncc gtnctggccc 420
cggcggcggc gctccccggt tgtcaaacac ctgccgtgtt cgttcacnca ctgcccaaca 480
tcnagcccga ncnatccnag gtccgtccaa cgcctccgcg gctcnccaac ctnctcccnc 540
tgatcntccg caccaaacac atgcccgact ccntgcnccn attgcttgna tccct 595

<210> 140
<211> 434
<212> DNA
<213> Mycobacterium tuberculosis

<400> 140
ccgctatcgg tcggtgtgct tggcggcgtc ggtatcaaca ccgcccacga aatggggcac 60
aagaaggatt cgctggagcg gtggctgtcc aagatcaccc tcgcccagac ctgctacggg 120
cacttctaca tcgagcacaa ccgtggccat cacgtccggg tgtccacacc ggaggacccg 180
gcgtcggcgc ggttcggcga gacgttgtgg gagttcctgc cccgcagtgt tatcggcggc 240
ttgcgctcgg ccgttcattt ggaggcccaa cggctgcgtc ggctcggcgt cagcccctgg 300
aatcccatga cgtatctgcg caacgacgtg ctcaacgcgt ggctgatgtc ggtggtgttg 360
tggggtgggc tgatcgcggt cttcggcccg gcgctgatcc cgttcgtcat catccaggca 420
gtcttcggct tcag 434

<210> 141
<211> 321
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (42)
<223> a, t, c or g

<400> 141
atactcatgc ttgccgaagt tccgatgggt cgcgccggcg ancccagcga agtcgctagc 60
gtggccgtgt tcttggcttc ggatctatcc tcgtacatga ccggcaccgt gttggacgtg 120
actggcggcc ggttcatatg acaccgagat cattgccacg gtacggcaat tcgtcaagaa 180
ggaaatcttt cccaatgcac cggccctcga acgtggcaac agctacccgc aagaaatcgt 240
cgatcggctg ggtgttattg gcttgctcgg tcgccggctg caagggtatc gacaccaccg 300
agttcattct ccgggcgtgc c 321

<210> 142
<211> 348
<212> DNA
<213> Mycobacterium tuberculosis

<400> 142
ggcgtcaacg gtgtcggcac cggcgtcctg cagttggtag gcctgcagtt tgtgcatcag 60
gccgatgccg cggccctcgt ggccacgcat gtacagcacc acgccgcgcc cctcacgggc 120
gaccatcgcc agcgcggcgt ccagctgagg cccgcaatcg cagcggcgtg acccaaacac 180
atcgccggtc aagcactccg aatgcacccg gaccagcacg tcgtcaccgt cggcgttggg 240
cccggcgatc tcgccgcgga ccagcgcgac atgttccacg tcctcgtaga tgctggtgta 300
gccgatggcg cgaatctccc atgacgagtc ggaatccgcg cctcggcg 348

<210> 143
<211> 339
<212> DNA
<213> Mycobacterium tuberculosis

<400> 143
atactcaagc ttcggcctcg ctgcaggagt gggagccgca gggctggaaa tccgaaaaac 60
gagccggtga tcgcactgtc gccgatcggg gccgcacctg gttggtgtta ccgatgaatc 120
cgcacccaaa atgtggctgc ggtggcgttt cttgactcct tggcgtcgac tcttgtggca 180
gccaccgagc ggttggtcca ggatctggat gggcaaagtt gtgcggcccg ccggtgacg 240
gccgatgagc tgaccgaggt cgacagcgcc gtgttggctg acttggaacc gacatggatt 300
cgccccggtt ggcgtcacct caagcatttc aatggttat 339

<210> 144
<211> 269
<212> DNA
<213> Mycobacterium tuberculosis

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<220>
<221> modified_base
<222> (264)
<223> a, t, c or g

<400> 144
atgcgtcacc ccgatgcgcc cagatcgggg cttcgcaaat aaagcacgaa caggcgggca 60
aaacgtctat ctcggagccg gaagggcaat cagccgaccg tcgacgaacg acaccggcga 120
taaccactta ggcgttgaac ggccggccca aacattacgc ctccgttgat aaggctttcg 180
gtctcttccc cggtcatccc aagcaccttg cggcaaattt gaacgctttc ctgtccgggc 240
accggccccg ggctttgggg tccntccga                                   269


<210> 145
<211> 285
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (187)
<223> a, t, c or g

<400> 145
atactcaagc ttcaatcgcg ccgccacaat ccaaatatgc gtctagcgtc tcgatgagcg 60
tcggtccggc atcggctagg ggccgcatca cgtcggtatg cagggccacg atcgcccaag 120
gcgtcgccca tcaagggcgc gttcgggcaa aaattcccct atccagcacg gccgcggcg 180
ctccgcncca gccggcgacg gcgttcatcc cggagatcgc ctcgctagcg ctgcggtgcg 240
ccgcggtcag catgggcgcc gtggggccga tgaccaccgg ggcgt            285


<210> 146
<211> 75
<212> DNA
<213> Mycobacterium tuberculosis

<400> 146
ttcggcgggt ctgtagattg cggtcggcca ccccacaggc actcatgaac cgcagcccac 60
gatcgatctc ggtgg                                                  75


<210> 147
<211> 164
<212> DNA
<213> Mycobacterium tuberculosis

<400> 147
gcgcaccatc gccagtaggt gcccgtggtc gggcgcgtcg agccacccga gcggaaacgc 60
gagtccgaac agcaacagca ggacgggcgc aaccagggcg gtgaccatgc ccccggcgct 120
gaacatcaac cacaggaagg gctccgccga gcgtccgcgc gacc                 164


<210> 148
<211> 228
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (26)
<223> a, t, c or g
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<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<400> 148
catcgtcgaa cttcggtccg ggttgntagn accgcagcac caaacgcacc caccgacccc 60
cacgcttcac gccaaccctt tagttcattg gcgtgaacag cagcgtagcc ggttgccccg 120
atatatgtgg aaaaatcgtt cggacgtaca aaaaaagttc ctgacgctgg cgtcaactcg 180
aaactgcctc ggaagtcaat gatgatccat cagtcaatat taaagtcg 228

<210> 149
<211> 238
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (230)
<223> a, t, c or g

<400> 149
atactcaagc ttgtctgctg cctcagcgta tgcatccaac agcgcatcgc gatcaacgat 60
caggcgcgcc gatttcgggc cgcgggcagt ggcactggcc agatggccgt ttttttcgag 120
aaacttcaac gcctgagcgc tgcttcccat cgagagaccg gtggcctcta caaccgatgc 180
gacagttgga ccggcgatgt tcgccagcag cgcttcacat acggcaagtn tggcgcgg 238

<210> 150
<211> 162
<212> DNA
<213> Mycobacterium tuberculosis

<400> 150
ttgtccaggc ggggaatcgg gcagggagac gacaccttcg ttcggttcga tcgtcgcgaa 60
cgggtagttg gccgcgacca cgttgtttcg ggtcagcgcg ttgaaaagtg tcgacttgcc 120
gacgttgggc aggcccacga tccccaggct caagctcaca ga 162

<210> 151
<211> 377
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<220>
<221> modified_base
<222> (190)
<223> a, t, c or g

<220>
<221> modified_base
<222> (192)
<223> a, t, c or g

<220>
<221> modified_base
<222> (314)

<223> a, t, c or g

<400> 151
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acgcggctga cgcgcctggt ggtcagcatc gtggccggtc tgctgttgta tgccaacttc 120
ccgccgcgca actgctggtg ggcggcggtg gttgcgctcg cattgctggc ctgggtgctg 180
acccnccgcn cnacaacacc ggtgggtggg ctgggctacg gcctgctatt cggcctggtg 240
ttctacgtct cgttgttgcc gtggatcggc gagctggtgg ccccgggcc ctggttggca 300
ctggcgacga cgtncgcgct gttccccggc atcttcggtc tgttcgccgt cgtggtaccc 360
tgttgccggg ttggccc 377

<210> 152
<211> 308
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (264)
<223> a, t, c or g

<220>
<221> modified_base
<222> (280)
<223> a, t, c or g

<400> 152
cgccaattca cgatatcgtt aaccgatatc ccgagccgat agctggcggg ctcgggtggt 60
ggccagcggc gctgcgacga aaggtgtgac cgtcatgaaa cagacaccac cggcggccgt 120
cggccgtcgt cacctgctcg agatctcagc atccgcagcc ggtgtgatcg cgctttcggc 180
gtgtagtggg tcgccgcccg accccggcaa aggccggccc gacacaaccc cggaacagga 240
agtcccggtc accgcgcccg aagnacttga tgcgcgaacn cggagtgctc caaacgcatc 300
ctgctgat 308

<210> 153
<211> 377
<212> DNA
<213> Mycobacterium tuberculosis

<400> 153
atactcaagc ttgggcactg acttcggtac cccctccgcc tttggccagc agcagccaca 60
gcgcggttcg cggaccgaac gtggacatca atagcccgga atcggtgtgt gcaagttggt 120
aaacggtgtt gatcccaagc tttgccagcc ttttcgtagt cttgggcccc acccccaca 180
gtgcttcgac ggtacggtca cccatgatgg ccatccagtt ggcatcggtg agctgataaa 240
tgccagctgg tttcgccaac ccggtagcga tcttggcgcg ctgcttgttg tcactgatac 300
ctatcgagca agacagcccg gtttgcgaca aaatgacttt tcggatctct tcggcgactt 360
cgatggggtc gtcggga 377

<210> 154
<211> 259
<212> DNA
<213> Mycobacterium tuberculosis

<400> 154
aaagtcctgt gccggttcgc taaacacccg gcggacactc agacggtgct ggtggtgcgg 60
catggcaccg cgggcagcaa agcgcacttc tccgggggac dacagcaagc gaccgctaga 120
caagaggggt cgtgcgcagg cagaaacgtt ggtacacagc tgctggcgtt cggcgccacc 180
gatgtttatg ccgccgaccg ggtgcgctgc caccagacga tggagccact cgccgcggaa 240
ctgaacgtga ccatacaca 259

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<210> 155
<211> 372
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (339)
<223> a, t, c or g

<220>
<221> modified_base
<222> (366)
<223> a, t, c or g

<400> 155
atactcaagc ttgggttcca cgcccgcgca gccacgccgt cacctttcca cgagacctca 60
cctgccgatc cgaaatggaa tcggccgtga cggaattggc gcaccgaaca cccaacgagg 120
tggtggcttc gtcgcgaacc gtcacccgag tcgcggccac cgtgcgcacg gcgacgttct 180
acacccgcac caagatccga aagctgcaag ctcccagcac cgatcccgac gtcatcaccg 240
ctgccgcccg gcacgtcctt gacctattcg agctggatcg gcccgtccgg ttgctgggag 300
tgcggttaga actggcctag aaccggcggg cacaccgcnc ctgggcgggg cgaattcttg 360
accgcnccgg cc   372

<210> 156
<211> 290
<212> DNA
<213> Mycobacterium tuberculosis

<400> 156
cgcggttggc gtagttggac gggtcgccct ccgaggccaa tgatgacgat gaccacgccg 60
atcacgatgg ccaccgagag ggacaacaac agaaagctga cgaatccctc cttggcggcc 120
ggggctttgt ggtcgccggt cgcgatgggc gcgaatttac ggcccgctcc cccaggccgc 180
cgcgaagcag ggtccccagc cagttggcgt aggcggaatt aacgatcagc gccaccgcga 240
taacctgcca tgcctcgggc atatcgatgt gcggccagaa caggccgaac 290

<210> 157
<211> 470
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (331)
<223> a, t, c or g

<220>
<221> modified_base
<222> (362)
<223> a, t, c or g

<400> 157
ccaacaagag catcgggaca tacggagtca actacccggc caacggtgat ttcttggccg 60
ccgctgacgg cgcgaacgac gccagcgacc acattcagca gatggccagc gcgtgccggg 120
ccacgaggtt ggtgctcggc ggctactccc agggtgcggc cgtgatcgac atcgtcaccg 180
ccgcaccact gcccggcctc gggttcacgc agccgttgcc gcccgcagcg gacgatcaca 240
tcgccgcgat cgccctgttc gggaatccct cgggccgcgc tggcgggctg atgagcgccc 300
tgacccctca attcgggtcc aagaccatca ncctctgcaa caacggcgac ccgatttgtt 360
cngacggcaa ccggtggcga gcgcacctag gctacgtgcc cgggatgacc aaccaggcgg 420
cgcgtttcgt cgcgagcagg atctaaccgc gagccgccca tagattcccg 470

<210> 158
<211> 434
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (4)
<223> a, t, c or g

<220>
<221> modified_base
<222> (134)
<223> a, t, c or g

<220>
<221> modified_base
<222> (178)
<223> a, t, c or g

<220>
<221> modified_base
<222> (355)
<223> a, t, c or g

<400> 158
```
taanacccgt gtaatttggg atgggcaaaa aggccaagca ccgcgtggcc acgaacgccg 60
ggagggacaa tctcgggcgg ctagggcttc tcgcgggaag gcccgaacgt acggcgtttc 120
aacacgtcgc gtcnccctcc gaccgcgaac attcggggat ggcagcaacc tggtagcncc 180
ctggccgggc gatgatctgc agcgtcgccg cgggtagtcg ccgcccgggc ggctacagtc 240
tgaaacgcga tgaccatcga tgtgtggatg cagcatccga cgcaacggtt cctacacggc 300
gatatgttcg cctcgctgcg ccggtggacc ggtgggtcta tcccggagac cgacntcccg 360
atcgaagcga ccgtctcctc gatggacgcc ggcggcgtca ccctgggttt gctcaccgcc 420
tggcgtggcc ccaa 434
```

<210> 159
<211> 363
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (363)
<223> a, t, c or g

<400> 159
```
gtccgcaaaa gactcagcgg ccgactttgc tcgcagctgg cggtaccgcg ccaccgattc 60
gatgccgtgg tcgcggaaga atgcctcccg aaatcgcacg gccgactcca gttcggcgag 120
catccgcgat gccagctgcg gctgcgccct gccggccacg gcacccacat gcggcagttc 180
gtccacctgg gccagcgccc cgccgccgaa gtccaaacaa tagaactgca cccggcccgc 240
atcgtgggta gcagccaacg ccatgatcag cgtccgcagc gcggttgact tgcccgtttg 300
cggtgcacct acgaccgcga cattgcctgc ggccccggac aagtcgatcg tcagcggcac 360
ccn 363
```

<210> 160
<211> 301
<212> DNA
<213> Mycobacterium tuberculosis

```
<220>
<221> modified_base
<222> (27)
<223> a, t, c or g

<220>
<221> modified_base
<222> (267)
<223> a, t, c or g

<400> 160
cgtggccacg aacgccggga gggacantct cgggcggcta gggcttctcg cgggaaggcc 60
cgaacgtacg gcgtttcaac acgtcgcgtc gccctccgac cgcgaacatt cggggatggc 120
agcaacctgg cagctacctg gccgggcgat gatctgcagc gtcgccgcgg gtagtcgccg 180
cccgggcggc tacagtctga aacgcgatga ccatcgatgt gtggatgcat catccgacgc 240
aacggttcct acacggcgat atgttcncct cgctgcgccg gtggaccggt gggtctatcc 300
c                                                                    301


<210> 161
<211> 436
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<400> 161
atactcaagc tttgcggcgg gcgccgaaat gtgaacgcac caaacccgcc cgctgcgggt 60
cggcgggcca ctcgacctcg aatttcgccg ccgtgaccat ccagcccgac ggcagttggg 120
cacccggccc cccggtcgcg gcataactgt tggcgtcgcc gtcataaagc tcgaacagca 180
ccgaaaccga ctccaccacc ggccggtgcg cctcaaaatc cacgccgatc tccacatacc 240
gggaaaacgt cggtgtccca tcgggtttcg gcttcccgc cagctgcaca ccaccggtgg 300
cctcggccac cttcgcggcc tgagcgcagc tacncatcct gacgatcatc accccgcccc 360
cggctcacgc ttggcctccg tgaccgcacg catcgcccgg ttgcgcgcac cgcgacgccc 420
gtacagccgc gcgcac                                                   436


<210> 162
<211> 390
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (333)
<223> a, t, c or g

<220>
<221> modified_base
<222> (363)
<223> a, t, c or g

<400> 162
agcttgccgg gactgcggaa cagaagcggc ggttcctacc gcggtgtgcg gccggcgcga 60
tatcggcctt tttactaacc gaacccgatg tgggctccga tccggcgcgc atggcatcga 120
cggcgacgcc gatcgatgac ggccaggctt acgagcttga gggtgtgaag ttgtggacca 180
ccaacggtgt ggtagcggac ctgctagtgg ttatggcgcg ggtaccgcgc agtgaagggc 240
accgaggggg aatcagcgcc tttgtcgtcg aggctgattc gcccgggatc accgtggagc 300
ggcgcaacaa gttcatggga ctgcgtggca tcnaaaacgg cgtgacccgg cttcatcgcg 360
tcngggtgcc caaagacaac ttgatcggca                                    390
```

<210> 163
<211> 75
<212> DNA
<213> Mycobacterium tuberculosis

<400> 163
ctcaagcttg gcgatgcggg ctggccaaaa ctggccgggc gggggttggc ttgttcaatc 60
aagggtgggt tgccg 75

<210> 164
<211> 110
<212> DNA
<213> Mycobacterium tuberculosis

<400> 164
ccgaaggccc gttcccgggc gttcagcaag cgatcgtcgg ttggcccact gcgggtcgaa 60
tcttgcggcc gcgccggtcg tggaacgccc aggtcacccg gcggcgtacc 110

<210> 165
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<400> 165
atactcaagc ttttttctgc tcatgaaggt tagatgcctg ctgcttaagt aattcctctt 60
tatctgtaaa ggctttttga agtgcatcac ctgaccgggc aaatagttca ccggggtgag 120
aaaaaagagc aacaactgat ttaggcaatt tggcggtgtt gatacagcgg gtaataatct 180
tacgtgaaat attttccgca tcagccagcg cagaaatatt tccagcaaat tcattctgca 240
atcggcttgc ataacgctga ccacgttcat aagcacttgt tgggcgataa tcgttaccca 300
atctggataa tgcagccatc tgctcatcat ccagctcgcc aaccagaaca cgataatcac 360
tttcggtaag tgcagcagct ttacgacggc gactcccatc ggcaatttct atgacaccag 420
atactcttcg accgaacgcc ggtgtctgtt gacca 455

<210> 166
<211> 309
<212> DNA
<213> Mycobacterium tuberculosis

<400> 166
ctcaagcttg gtgccgacat ggccgggctg gagcccgcgt atggcaaggt tccgctcaat 60
gtggttgtga tgcagcagga ctacgttcgc ctcaatcagc tcaaacgtca cccccgtggc 120
gtgctgcgca gcatgaaggt cggcgcccgc acgatgtggg cgaaggcaac aggtaaaaac 180
ctggtcggca tgggtcgagc cctcattggg ccgttgcgga tcgggttgca ccgcgccgga 240
gtgccggtcg aactcaacac cgccttcacc gatctttcg tcaaaaatgg cgtcgtgtcc 300
ggggtatac 309

<210> 167
<211> 232
<212> DNA
<213> Mycobacterium tuberculosis

<400> 167
ccgaagcgtg ggaaatcctg accgaatacc gcgacgtgct ggacactttg gccggcgagc 60
tgctggaaaa ggagaccctg caccgacccg agctggaaag catcttcgct gacgtctaaa 120
agcggccgcg gctcaccatg ttcgacgact tcggtggccg gatcccgtcg gacaaaccgc 180
ccatcaagac acccggggga gatcgcgatc gaaacgcggc gaaacttggg cc 232

<210> 168
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (426)
<223> a, t, c or g

<400> 168
cgactcgaca agcattcttg acagttgttt tggctcggca tggttagcca aggttctgcg 60
gtcccaccag atcatcttgg tccggtagcg ctcgtccggg tatgctgccg ccgggattct 120
cgctgctatt actccccccg aaaaacgcca ccggtccagc gcgtgggccg ccgcggtccc 180
catcacaaac tgaacccca acaggggaca tgcttagcgg tagggcgcgc gccaaggcgg 240
cagcaatcgc atcactgcgc tgcgcgtcac tattaaccca cccggacttc acttccacga 300
ccccgaatgg cgcccggtca ttgatcatct tgcgcaccgc ggataatccg ggattgccag 360
cccattcgac taccgcatgc gagtcatcgg ctgaccgcag cggtccgatt acccgagcgc 420
cccgantaca tctcctccaa tatcaatggg cgcaa 455

<210> 169
<211> 428
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<400> 169
gcggtntagc ttcccgtcgt accggcgacc gccagccgag aagctcgttt tcccagtgtt 60
gctggggatt ctcacgctgc tgctgagtgc gtgccagacc gcttccgctt cgggttacaa 120
cgagccgcgg ggctacgatc gtgcgacgct gaagttggtg ttctccatgg acttggggat 180
gtgcctgaac cggttcacct acgactccaa gctggcgccg tctcgtccgc aggtcgttgc 240
ttgcgatagc cgggaggccc ggatccgcaa tgacggattc catgccaacg ctccgagttg 300
catgcggatc gactacgaat tgatcaccca gaaccatcgg gcgtattact gcctgaagta 360
cctggtgcgg gtcggatact gctatccggc ggtgacgacc cccggcaagc cgccatccgt 420
gctgctgt 428

<210> 170
<211> 385
<212> DNA
<213> Mycobacterium tuberculosis

<400> 170
ctcaagcttg ggcgtgacgg ccaccggggc cactccgcac aatctgtacc cgaccaagat 60
ctacaccatc gaatacgacg gcgtcgccga ctttccgcgg tacccgctca actttgtgtc 120
gaccctcaac gccattgccg gcacctacta cgtgcactcc aactacttca tcctgacgcc 180
ggaacaaatt gacgcagcgg ttccgctgac caatacggtc ggtcccacga tgacccagta 240
ctacatcatt cgcacggaga acctgccgct gctaaagcca ctgcgatcgg tgccgatcgt 300
ggggaaccca ctggcgaacc tggttcaacc aaacttgaag gtgattgtta acctgggcta 360
cggcgacccg gcctatggtt attcc 385

<210> 171
<211> 318
<212> DNA
<213> Mycobacterium tuberculosis

```
<220>
<221> modified_base
<222> (292)
<223> a, t, c or g

<400> 171
cgggtgtcat tggccaccgg cggcggctgt ccgggaaatg gcgggtcccc ggtggttttg 60
ctgaggagtg ctgaaccgta gtcgaagtgg gcggcgtcag actccaccca gccagcaggc 120
agcgcgaagc tgaatcctcc aaccgggttg tcgatccgga caggttgggg tgcgtttggg 180
gcaatgacag gtggcggcgg tgcgttcggg tcggccggcg gaggtgctgc gttgggatcg 240
cccggctggg cattcggcgt gttggcggcg gccggtggtg gggggcaac angtgtcgcc 300
ggtgcgggtg cgctgca                                                318
```

```
<210> 172
<211> 443
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (1)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (437)
<223> a, t, c or g
```

```
<400> 172
ncttgatatt ggcgtcaacg gtgtcggcac cggcgtcctg cagttggtag gcctgcagtt 60
tgtgcatcag gccgatgccg cggccctcgt ggccacgcat gtacagcacc acgccgcgcc 120
cctcacgggc gaccatcgcc agcgcggcgt ccagctgagg cccgcaatcg cagcggcgtg 180
acccaaacac atcgccggtc aagcactccg aatgcacccg gaccagcacg tcgtcaccgt 240
cggcgttggg cccggcgatc tcgccgcgga ccagcgcgac atgttccacg tcctcgtaga 300
tgctggtgta gccgatggcg cgaaactccc catgacgagt cggaatccgc gcctcggcga 360
cccgctcaat gtgcttctcg tgcttgcgcc gccattcgat caagtcagca atggtgatca 420
gcgccagacc gtgctcntcg gcg                                         443
```

```
<210> 173
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 173
cataagggcc ggcgtacccg gtaccggccg cgggcctacc acgtgccgga actggaagcg 60
cagtaagccc tcaacgcgcc accgctttgg cccgcgcgcc cggcgtaggc gcatcggcgg 120
tggccgtggg gcggcgcact gcgacctcac cagcggcttt cgagctttgt tcgatcaacc 180
ggccagcatg gtcgaggatg cattcgagac catattcgaa attggtttca tcgggggccc 240
cgatccgatg cccctccca gttgcgtgag caagcagcgg agtcgtcgcg ggatcgatgg 300
ccacggggtg ttcaatggcg gatggtccgc tgcccgccga ctggctcttg cgggagagcc 360
gatctagcac caccgatccg cgcacgtgga ccgaaaccgc cgagtagatg tcgaaagcgt 420
```

```
<210> 174
<211> 336
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (113)
```

<223> a, t, c or g

<220>
<221> modified_base
<222> (141)..(142)
<223> a, t, c or g

<220>
<221> modified_base
<222> (154)
<223> a, t, c or g

<400> 174
```
cgtccttttc cccaagatag aaaggcagga gagtgtcttc tgcatgaata tgaagatctg 60
gtacccatcc gtgatacatt gaggctgttc cctgggggtc gttaccttcc acnagcaaaa 120
cacgtagccc cttcagagcc nnatcctgag caanatgaac agaaactgag gttttgtaaa 180
cgccaccttt atgggcagca accccgatca ccggtggaaa tacgtcttca gcacgtcgca 240
atcgcgtacc aaacacatca cgcatatgat taatttgttc aattgtataa ccaacacgtt 300
gctcaacccg tcctcgaatt tccatatccg ggtgcg                           336
```

<210> 175
<211> 264
<212> DNA
<213> Mycobacterium tuberculosis

<400> 175
```
ctcaagcttc atgtccgtac ggctcgggta cgcttccgtc gcagtgtgcg agtgataaat 60
gacgaccggg acctcgtcgg catcttccat agcccgccac accttcagtt gctcaccgga 120
atccaaccgg tagaaggtcg gcgagcgctc ggcattggtc atcgggatat gccgctcggg 180
acggtcagag ccctcgggtc cggccagcac tccgcaggct tcgtcggggt ggtcgcgaca 240
cgcatgggcc accatcgcat tcac                                        264
```

<210> 176
<211> 325
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (230)
<223> a, t, c or g

<400> 176
```
ncgccgccag ccaccacgcg cgggtcgggc gccgggcccg ggccgccagg ctgctccgct 60
cggtgatggc acgccaccgc gacaccaccc ggctgcgcta cgtcgagcca taccgggcgg 120
agctacatcg gctcggccgc ccagtgttcg ggccctcttt cgaggtcgag gtcgataccg 180
atttgcgcat ccgcagccgc accctggacg acagaaccgt gccctacgan tgcttgtcgg 240
gcggggccaa agaacagctt ggcatcctgg cgcgattggc cggcgcggcg ctggtctcca 300
aagaagacgc ccttccggtg ctgat                                       325
```

<210> 177
<211> 243
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (224)
<223> a, t, c or g

<400> 177
cgccacgttc atgggcaaca accccgatca ccggtggaaa tacgtcttca gcacgtcgca 60
atcgcgtacc aaacacatca cgcatatgat taattcgtcc aattgtataa ccaacacgtt 120
gctcaacccg tcctcgaatt tccatatccg ggtgcggtag tcgccctgct ttctcggcat 180
ctctgatagc ctgagaagaa accccaacta aatccgctgc ttcncctatt ctccagcgcc 240
ggg   243

<210> 178
<211> 430
<212> DNA
<213> Mycobacterium tuberculosis

<400> 178
atactcaagc ttcaaccgat tgacgcattg tgcgaactga cggcgcccgc gcatggccaa 60
tccggaagac catcattggc cagtggccgg gcgctaacag gttccagccc cccaccagtg 120
ccgctcgaac atgcggtgca acccattcgc aggccggcag ggaaagcacc gcggaagccg 180
caaagggctg cagttccgcg cccaatagtg tcgtccgcaa ccagatgcgc tcgaaaaccg 240
cgccggcagt cagcgcaccc gacgcgaggt cgagagacgt cgtcagcgcg cccacatggg 300
gtgccaatcg gcacggcagg taggccgcgc gcaacccgaa cgcgtggtgc atgcccacgg 360
tccgcaggag gcgcagcacc cgccaatgcc gaagcccacg aaacatcggg cgcatccacg 420
cttcaacctc   430

<210> 179
<211> 448
<212> DNA
<213> Mycobacterium tuberculosis

<400> 179
agcttttggc agggtctcct tcgaattcgg cgtgcaccgc tatgggttgc agcagcggct 60
ggcgccgcac accccactgg cccgggtgtt ttcgccccga acccggatca tggtgagcga 120
aaaggagatt cgcctgttcg atgctgggat tcgccaccgc gaggccatcg accgattact 180
cgccaccggg gtgcgagagg tgccgcagtc ccgctccgtc gacgtctccg acgatccatc 240
cggcttccgc cgtcgggtgg cggtagccgt cgatgaaatc gctgccggcc gctaccacaa 300
ggtgattctg tcccgttgtg tcgaagtgcc tttcgcgatc gactttccgt tgacctaccg 360
gctggggcgt cggcacaaca ccccggtgag gtcgtttttg ttgcagttgg gcggaatccg 420
tgctctgggt tacagcccga atcgtcac   448

<210> 180
<211> 380
<212> DNA
<213> Mycobacterium tuberculosis

<400> 180
atactcaagc tttgtcacac caactgtttc caccaggcgc tccatccggc gagtggatac 60
tcccagcagg tagcaggtcg ccaccacgct ggtcagtgcg cgttcagctc gcttgcggcg 120
ctgcagcagc cagtccggga aatagctgcc ctggcgcagc ttggggatcg cgacttctat 180
ggttgcggca cgggtgtcga aatcacggtg gcggtagcc ttgcgctgat tggaccgctc 240
atcgctgcgt tcgcggtagc ccgccccgca cagggcgtcg gcttcagccc ccatcaaggc 300
ggcgatgaac gtcgagagca gcccgcgcag cagatccggg ctcgcctgtg cgagttggtc 360
agccagaacc tgctcggtgt   380

<210> 181
<211> 532
<212> DNA

<213> Mycobacterium tuberculosis

<400> 181
ccttaagccc cgcagggccc ggcacgcgcg gtaccgccca ggtcgcccaa cagatcgtcg 60
atgttcgcgt cgtccgcctc gcgcacgtgg tctgtcacca gtcaacgtta acgccgccgc 120
acatgtcctg cggccgggca aaaacgtgaa aaacgagcgg gcgactgcaa tgtcatgaca 180
ccgacggccg ccgatgggcc cagggtctgg cagattcgat ctgtgcggcc agtgccagca 240
gcgtcgcctc gtcatacggc cggccgacga gttgaaccga catgggcagg ccgtcgccgt 300
cgaagtccca cggcaccacg gccgcgggct ggccggtcag attccagact tgaaagtacg 360
gaacccgctg caccaccagc agcaacgtcg aaactgcacc ccggcgttgg taggcgccga 420
tgcgggacgg gccggtcgcg gcgcctggcg tcacaactac gtcgacatcg tcgaagatcg 480
actggatcgg ctgctcacac cactcggcgg ccgcaggccg ccatccgccg tc   532

<210> 182
<211> 477
<212> DNA
<213> Mycobacterium tuberculosis

<400> 182
agctttttga gcgtcgcgcg gggcagcttc gccggcaatt ctactagcga gaagtctggc 60
ccgatacgga tctgaccgaa gtcgctgcgg tgcagcccac cctcattggc gatggcgccg 120
acgatggcgc ctggaccgat cttgtgccgc ttgccgacgg cgacgcggtg ggtggtcaag 180
tccggtctac gcttgggcct ttgcggacgg tcccgacgct ggtcgcggtt gcgccgcgaa 240
agcggcgggt cgggtgccat caggaatgcc tcaccgccgc ggcactgcac ggccagtgcc 300
gcggcgatgt cagccatcgg gacatcatgc tcgcgttcat actcctcgac cagtcggcgg 360
aacagctcga ttcccggacc gcccagcgca ttggtgatgg aatcggcgaa cttggccacc 420
cgctgggtgt tgacatcctc gacggtgggc aattgccccc ggtaacgttt gccgcct   477

<210> 183
<211> 461
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (374)
<223> a, t, c or g

<220>
<221> modified_base
<222> (434)
<223> a, t, c or g

<400> 183
cggtccgacc ctgttcgacg gctacctgaa tcaacccgat gccaccgccg cggcgttcga 60
cgccgacagc tggtaccgca ccggcgacgt cgcggtggtc gacggcagtg ggatgcaccg 120
catcgtggga cgcgagtcgg tcgacttgat caagtcgggt ggataccggg tcggcgccgg 180
tgaaattgaa acggtgctgc tcgggcatcc ggacgtggcg gaggcggcag tcgtcggggt 240
gcccgacgat gatctaggcc agcggatcgt tgcctacgta gtcggctcag cgaatgtcga 300
tgcggacggg cttatcaact ttgttgccca acaactttcg gtgcacaagc gcccgcgcga 360
ggtgcgtatc gtanatgcgc tgccgcgcaa cgccttgggg aaagtgctcc agaacattgc 420
tgtcagaagc tganctacgc gaattatcgt gttacgctgg a   461

<210> 184
<211> 440
<212> DNA
<213> Mycobacterium tuberculosis

<400> 184
atactcaagc ttgccgaagt tccgatgggt cgcgccggcg agcccagcga agtcgctacc 60

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```
gtggccgtgt tcttggcttc ggatctatcc tcgttcatga ccggcaccgt gttggacgtg 120
actggcggcc ggtccatatg acaccgagat cattgccacg gtacggcaat tcgtcaagaa 180
ggaaatcttt cccaatgcac cggccctcga acgtggcaac agctacccgc aagaaatcgt 240
cgatcggctg ggtgttattg gcttgctcgg tcgccggctg caagggtatc gacaccaccg 300
agttcattct cgggcgtgcc ggcgcattcg agctggcggt gcgcgctgcc cagcaccgtc 360
ataggtactt gacgatggtc cacgtcggac gagcgcctcc acgtcgctgc cgaacggtat 420
gcatggcggc tacgattctc                                            440
```

```
<210> 185
<211> 515
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 185
cggtgtcggc accggcgtcc tgcagttggt aggcctgcag tttgtgcatc aggccgatgc 60
cgcggccctc gtggccacgc atgtacagca ccacgccgcg cccctcacgg gcgaccatcg 120
ccagcgcggc gtccagctga ggcccgcaat cgcagcggcg tgacccaaac acatcgccgg 180
tcaagcactc cgaatgcacc cggaccagca cgtcgtcacc gtcggcgttg ggcccggcga 240
tctcgccgcg gaccagcgag acatgttcca cgtcctcgta gatgctggtg tagccgatgg 300
cgcgaaactc cccatgacga gtcggaatcc gcgcctcggc gacccgctca atgtgcttct 360
cgtgcttgcg ccgccattcg atcaagtcag caatggtgat cagcgccaga ccgtgctcat 420
cggcgaacac cgcaattcat cggtgttgcg ccatcgagcc ctcatctttt tggctgacga 480
tctcgcaaat cgccccgcg ggttgcagcc ggcat                            515
```

```
<210> 186
<211> 345
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (256)
<223> a, t, c or g
```

```
<400> 186
atactcaagc tttgggtgaa agccgatcac cggaagccgc atgatcagcc acgtttcgcg 60
ccgcccggca tacggcggcg taccgatctc cgcgtcatac acccgcgggt aatcgccgac 120
ggtgccggtt cgcgagccga aggtgacgac gctgattgaa tcgagttcca ggtccagcgg 180
gtggcgcagc aacggcgcga gctcaacgac gtcaatcacg ttgtcgcttt ctacggtcac 240
cgacccggtg accgtnctcg cccggtgcgc tcggccgata agttgcaccg ccaccaccgc 300
gacaccgtct tgcacgcgga cccaccccg gatccgttgt tggcc                 345
```

```
<210> 187
<211> 366
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (322)
<223> a, t, c or g
```

```
<400> 187
agcttgctgg catccgctcc agtagcgccc cgcgcgtggc ttccagcgcc cgcagatgct 60
ccatgagccg gccggtcgag tcggcgccgg cgttcaccgc cacccgccag gagctggcgg 120
ccagcatctc cgccttcacg cattgcgcga tcacagagag aatatacgtc tcatattcgt 180
tggaggtcgt cgcaggcaat cggtcgatga cggatttgat ggcatcgagc tgtgcttcgg 240
cgtagccctc cagcacgtcg gtatcgctgt ggcggtccac gacgaccgca ccggcgcggc 300
ggacagccgt cgggttggac gntgtcggc gatcagtccg gccagctccg cctcgggatc 360
agcggc                                                           366
```

<210> 188
<211> 423
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (316)
<223> a, t, c or g

<220>
<221> modified_base
<222> (319)
<223> a, t, c or g

<400> 188
atactcaagc ttgctgcagc ttcctatgac tgctcccgaa acctgggggt gtgcctgctg 60
tgtatgcacg gcatacggac atccttcccc tgagacccgc ggtcgaacca gccacgtgtc 120
catcatcagg ggtcaacccc ggccaagggc gacggcacgc caagttcgcc gaccgttaac 180
ctagtgctgt tagcttcatt tgctgcgagc aaaacagctg gtcggccgtt aggaactgaa 240
ttgaaactca accgatttgg tgccgccgta ggtgtcctgg ctgcgggtgc gctggtgttg 300
tccgcgtgtg gtaacnacna caatgtgacc gggggaggtg caaccactgg ccaggcgtcg 360
gcgaaggtcg attgcggggg gaagaagaac tcaaagccag tgggtcgacg cgcaggccaa 420
cgc 423

<210> 189
<211> 453
<212> DNA
<213> Mycobacterium tuberculosis

<400> 189
agcttgacgc ggagacggac acattgcgaa cattgatgac aaaatagaaa tcattgatgg 60
tttgagtcac caggccgatc aagccttcgc cgagccaaat tccaatcaag aggcccaagc 120
ccgtaccaat cagcccggca acgagggatt ccgtcattat cagccaaaat aactgctctc 180
gggttacacc caaacagcgc aatatggcga aaaacggtcg ccgttgcacg acattaaatg 240
tcacggtatt gtagattaaa aagatcccca ccaacaaggc aatcaaactg agagcggtta 300
aattgaccgt aaaagcgtcc gtcatctgtt tgacggtgtc ccgttgggta tccgacgttt 360
ccatacgcac accggccggc agtctttgtt ggatgcgtgt tgcagtggcc tcatctttga 420
tgatcaaatc gatgtggctc agtcttccgg gca 453

<210> 190
<211> 402
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (342)
<223> a, t, c or g

<220>
<221> modified_base
<222> (344)
<223> a, t, c or g

<220>
<221> modified_base
<222> (389)
<223> a, t, c or g

<220>
<221> modified_base
<222> (395)
<223> a, t, c or g

<400> 190
atactcaagc ttcggctcag gcggcgctgc tggtaaagtc gctgaccggt gcaggtttcg 60
acaatgtggt gccggttcgg cggctacgtg ccatcgagac actggcgcag gctatcgcac 120
ccgttatcgg ctacgagcaa atcgcggtat gcgttcttga gcatgagtcg gcgaccgtcg 180
tcatggtcga cacccacgac ggaaagacgc agatcgccgt caagcatgtg tgccgcggat 240
tatcaggact gacctcctgg ctgaccggca tgtttggtcg cgatgcctgg cgcccggccg 300
gcgtggtcgt ggtccgctcg gatagcgagg tcagcgaatt cncntggcag ctccaaaggg 360
tcctgccggt gccggtcttt gcgcaaacna aggcncaggt ta 402

<210> 191
<211> 427
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (420)
<223> a, t, c or g

<400> 191
tgatcgcgca tcacctgctt cataaactgg aagcagcgca gcgcttcctt ttcggccgca 60
acatgagcca gcctctcgtc ggcggtcggg tgcaggtgct cgggcagctc ggccgcgaca 120
gccgcctgac cctgaaacca gcttccatat cccgcgacga acgacgccag tccgctacgt 180
aacccctccg cgactgtcca tggacaacag cgcgttctcc accgaccggg cccgggtgtg 240
gggtgtttcg gcgaccggca gccaggtggt ccacactgcc gacgggcgcc gcgagccgtt 300
caccgaccag gccgccgagc aagtccgccc gatcgcatac tccaaccggt tgcggtactg 360
caggttcagc tggcgtactc ctcgtcgcgc tcggcgaggt cttgctccag cacgtcgcan 420
acggcag 427

<210> 192
<211> 347
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (347)
<223> a, t, c or g

<400> 192
caaagcgcga actgctcgcg gcagcccacg acgtgctgcg tcggattgcc ggcggcgaaa 60
tcaattccag gcagctcccg gacaatgcgg ctctgctggc ccgcaacgaa ggactcgagg 120
tcaccccggt gcccggggtc gtggtgcacc tgccgatcgc acaggttggc ccacaaccgg 180
ccgcttgatg cccggtcggc aagcccggca gttgccaaac ccagcgtgat caggctcggc 240
tcgcgagttc cgggaagaag tggctccgcc tgatcaccta ccatccgcca ggatctgcgt 300
gtcttcacca cgcccgccaa ggaggttgtt gtggtgctat cgaccgn 347

<210> 193
<211> 330
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<222> (227)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<220>
<221> modified_base
<222> (287)
<223> a, t, c or g

<400> 193
ccggaagccg catgatcagc caagtttcgc gccgcccggc atacggcggc gtaccgatct 60
ccgcgtcata cacccgcggg taatcgccga cggtgccggt tcgcgagccg aaggtgacga 120
cgctgattga atcgagttcc aggtccagcg ggtggcgcag caacggcgcg agctcaacga 180
cgtcaatcac gttgtcgctt tctacggtca ccgacccggt gaccgtngtc gcccggtgcg 240
ctcggccgaa aanttgcacc gccaccaccg cgaaaccgtc ttgcacnccg gaagccaccc 300
ccgatccgtt gttgggccag gttattgggt 330

<210> 194
<211> 215
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (87)
<223> a, t, c or g

<220>
<221> modified_base
<222> (179)
<223> a, t, c or g

<220>
<221> modified_base
<222> (196)
<223> a, t, c or g

<400> 194
ccggaaccgc cgacggcacg gtataacgcc tccgcatatg ggtcgacaac cagcgggtcg 60
gacttctggg cttctagcgt tcgcgcngtc gcgacaaaca gcgcggtcga accgacactc 120
gttgtgatgt cctagctatc acgttcggta cgcacccaat cgagtctagc gcgggtagnt 180
cagccccgat ctccangctc cgccgagcca ggcgc 215

<210> 195
<211> 225
<212> DNA
<213> Mycobacterium tuberculosis

<400> 195
ctggtttatg tcccgttgaa gttccatcac ccgatgtggc gggagcactg ccaggtcgat 60
ctcaactacc acatccggcc gtggcggttg cgcgccccgg ggggtcggcg cgaactcgac 120
gaggcggtcg gagaaatcgc cagcacccca ctgaaccgcg accacccgct gtgggagatg 180
tacttcgttg aggggcttgc caaccaccgg atcgcggtgg ttgcc 225

<210> 196
<211> 161

<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (26)
<223> a, t, c or g

<220>
<221> modified_base
<222> (87)
<223> a, t, c or g

<400> 196
ccgagcagtt gggaatcgct ctgcancaaa ccaatattct gcgcgacgtc gcgcgacgag 60
ctggaccgat taggcgtacg cctccgnctg gacgacaccg gggcactcga tgaccccgac 120
gcctacgctc gcaggatatt gttcgccgga cccctctcta g 161

<210> 197
<211> 240
<212> DNA
<213> Mycobacterium tuberculosis

<400> 197
tatataatac tcaagcttgc cgacgccaac gctcgcgcga tgttgttagc ccgacccggc 60
tcttacatgg caccggtgcc ccacacgtca gcctgtgacg tcctgcaccg cgactcttta 120
catagaatgt ggattgccgg attgggggatg tccggcatcg ctcaatctgt agtccgcgtt 180
gtcccgcgag ggccatgtgg atggggggaa ggatccgtgg cgtccgggat caccatgggg 240

<210> 198
<211> 348
<212> DNA
<213> Mycobacterium tuberculosis

<400> 198
atactcaagc ttgccgaagt tccgatgggt cgcgccggcg agcccaacga aatcgctagc 60
gtggccgtgt tcttggcttc ggatctatcc tcgtacatga ccggcaccgt gttggacgtg 120
actggcggcc ggttcatatg acaccgagat cattgccacg gtacggaaat tcgtccagaa 180
ggaaatcttt cccaatgcac cggccctcga acgtggcaac agctacccgc aagaaatcgt 240
caatcggctg ggtgttattg gcttgctcgg tcgccggctg cgagggtttc tacaccaccg 300
agttcattct cgggcgtgcc ggcgcattcg aactggcggt gcgcgctg 348

<210> 199
<211> 371
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (307)
<223> a, t, c or g

<400> 199
gcaccggcgt cctgcagttg gtaggcctgc agtttgtgca tcaggccgat gccgcggccc 60
tcgtggccac gcatgtacag caccacgccg cgcccctcac gggcgaccat cgccagcgcg 120
gcgtccagct gaggcccgca atcgcagcgg cgtgacccaa acacatcgcc ggtcaagcac 180
tccgaatgca cccggaccag cacgtcttca ccgtcggcgt tgggcccggc gatctcgccg 240
cggaccaacg cgacatgttc cacgtcctcg tagatgctgg tgtagccgat ggcgcgaaac 300
tccccangac aagtcggaat ccgcgcctcg gcgaaccgct caatgtgcct ctcgtgcttg 360
cgccgccatt c 371

<210> 200
<211> 165
<212> DNA
<213> Mycobacterium tuberculosis

<400> 200
tggtccgtgt gcgcatacca atacaacgcg ccgggcacct gacgcggcgg ccgcaaccaa 60
tcggtggcca tcgccatctt ctgctacccg gtcaacggac gcaccttctc ctggccgacg 120
tagtgcgccc acccgccgcc gttgcgtccc atcgatccgg tcaac 165

<210> 201
<211> 390
<212> DNA
<213> Mycobacterium tuberculosis

<400> 201
ggcgtgttgg ccaccggggc cactccgcac aatctgtacc cgaccaagat ctacaccatc 60
gaatacgacg gcgtcgccga ctttccgcgg tacccgctca actttgtgtc gaccctcaac 120
gccattgccg gcacctacta cgtgcactcc aactacttca tcctgacgcc ggaacaaatt 180
gacgcagcgg ttccgctgac caatacggtc ggtcccacga tgacccagta ctacatcatt 240
cgcacggaga acctgccgct gctaaagcca ctggcgatcg gtgccgatcg tggggaaccc 300
actggcgaac ctggttcaac caaacttgaa ggtgattgtt tacctgggct acggcgaccc 360
ggcctatggt tattcgacct ccccgcccaa 390

<210> 202
<211> 427
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (9)
<223> a, t, c or g

<220>
<221> modified_base
<222> (18)
<223> a, t, c or g

<220>
<221> modified_base
<222> (25)..(26)
<223> a, t, c or g

<220>
<221> modified_base
<222> (154)
<223> a, t, c or g

<400> 202
cgtccgtgnc ccctcaancg cgtgnngccg aagcggctgg ttacgactcc ctgtttgtga 60
tggacacttc taccaactgc ccatgttggg gacgcccgac cagccgatgc tggaggccta 120
cacggcccтt ggtgcgctgg ccacggcgac cgancggctg caactgggcg cgttggtgac 180
cggcaatacc taccgcagcc cgaccctgct ggcaaagatc atcaccacgc tcgacgtggt 240
tagcgccggt cgagcgatcc tcggcattgg agccggttgg tttgagctgg aaacaccgcc 300
agctcggctt cgagttcggc actttcagtg accggttcaa ccggctcgaa gaggcgctac 360
agatcctcca gccaatggtc aagggtgagc gcccaacgtt tttcggcgat tggtacacca 420
ccgaatc 427

<210> 203
<211> 498
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (22)..(23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (32)
<223> a, t, c or g

<220>
<221> modified_base
<222> (379)
<223> a, t, c or g

<220>
<221> modified_base
<222> (455)
<223> a, t, c or g

<400> 203

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ccgcttccgt gtaaccgagc anngcgagcg anctggcgag gaagcaaaga agaactgttc 60
tgtcagatag ctcttacgct cagcgcaaga agaaatatcc accgtgggaa aaactccagg 120
tagaggtaca cacgcggata gccaattcag agtaataaac tgtgataatc aaccctcatc 180
aatgatgacg aactatcccc cgatatcagg tcacatgacg aagggaaaga gaaggaaatc 240
aactgtgaca aactgccctc aaatttggct tccttaaaaa ttacagttca aaaagtatga 300
gaaaatccat gcaggctgaa ggaaacagca aaactgtgac aaattaccct cagtaggtca 360
gaacaaatgt gacgaaccnc cctcaaatct gtgacagata accctcagac tatcctgtcg 420
tcatggaagt gatatcgcgg aaggaaaata cgatntgagt cgtctggcgg cctttctttt 480
tctcaatgta tgagagcg                                                 498
```

<210> 204
<211> 265
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (107)
<223> a, t, c or g

<220>
<221> modified_base
<222> (156)
<223> a, t, c or g

<220>
<221> modified_base
<222> (165)
<223> a, t, c or g

<220>
<221> modified_base
<222> (168)
<223> a, t, c or g

<400> 204
tgacacccaa cagagggcac ttaagatggc aatgcggccg cctacctgca cgttttcgcg 60
atgtcagagg atgccgaggg agaacaatgc gagcacggcc gctgacnttg ctcaccgctt 120
tggcggcggt gacattggtg gtggttgcgg gctgcnaggc ccgantcnag gccgaagcat 180
atagcgcggc cgaccgcatt tcgtctcgac cgcaagcgcg acctcagccg cagccggtgg 240
agctactgct gcgcgccatc acgcc 265

<210> 205
<211> 369
<212> DNA
<213> Mycobacterium tuberculosis

<400> 205
acgggcgacg ctgaggtggg cccgcggcta ttcatgctgt cgtccacgtc cagcgacgca 60
ctgcgccaga cggcccgcca actagccacc tgggtggaag aacaccagga ctgcgtggcg 120
gcctcggatc tggcctacac gctggccgt ggccgcgcgc accggccggt gcgcaccgcg 180
gtggttgccg ccaacctgcc ggagctcgtc gagggtttgc gcgaggtggc cgacggtgac 240
ccctctatga cgcggcggtg ggacactgtg atctaagacc ggtctgggtc ttctccgggc 300
aagggtctca gtgggcggcg atgggcaccc aattgctcgc cagcgaacca gtgttcgcgg 360
ccaccatcg 369

<210> 206
<211> 428
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (280)
<223> a, t, c or g

<400> 206
atactcaagc ttcgcgagat ccggatggca ctcacgctgg acaagacctt cacaaaatct 60
gaaatcctga cccgatactt gaacctggtc tcgttcggca ataactcgtt cggcgtgcag 120
gacgcggcgc aaacgtactt cggcatcaac gcgtccgacc tgaattggca gcaagcggcg 180
ctgctggccg gcatggtgca atcgaccagc acgctcaacc cgtacaccaa ccccgacggc 240
gcgctggccc ggcggaacgt ggtcctcgac accatgatcn aaaacttccc ggggaggcgg 300
aggcgttgcg tgccgcccag ggcgaaccgc tgggggttct gccgcagccc aatgattgcc 360
gcgcggctgc atcgcgggcg gcgaccgcca ttcttctgcg aatacgtcca ggagtactgt 420
ctcggggc 428

<210> 207
<211> 378
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<400> 207
agcttatgtg gccgcccacc taccttatct agcctagcta actaaatcca gtgccgacag 60
tgcgcggctg gccacccagc atgaggttat gaccacggca tatgccagcg cgctggcggc 120
gatgccgacg ctgaccgagt tggccgctaa tcacaccagc catgcggtgt tgctgggaac 180
gaatttcttt ggaatcaata cgatcccgat cgcgctcaat gaggccgact atgcgcggat 240
gtggattcag gcggccacca cgatgagtat ctatgagggc acctccgatg cggcgctggc 300
gtcngcaccg caaaccacac cggctccggt actgttcaac ggcggtgctg gcgtttgcca 360
gcgcctgccg gcgatctc 378

<210> 208
<211> 284
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (117)
<223> a, t, c or g

<400> 208
atactcaagc ttgccaccca tgccgagcaa ggtcgactca gcgatgacga attgttcttc 60
ttcgcggtgt tgctgctggt tgcgggctat gagagcactg ctcatatgat tagcacnttg 120
tttctgacgc tggccgacta tccagatcag ctgacactcc ttgcgcagca accagacctg 180
atcccgtcgg cgatcgagga gcacctccgc tttatatcgc aatccaaaac atctgccgca 240
caacgcgcgt cgactattcg gtcggtcaag cggtcatccc ggga 284

<210> 209
<211> 236
<212> DNA
<213> Mycobacterium tuberculosis

<400> 209
ccggggtaga acgatgcgat ctgggccatg tcgacatcgg tggtacaggt aaaccgcgcc 60
gtgtgcgcgg tctcggagat cagaacgtgg tcgcagttga caccgcgggc tttcagccag 120
tcgcgataat cggcgaagtc ggcgcctgcc gccccaacta gcgcgacctc gccacctagc 180
acaccgatgg cgaaggccat gtttccggcc acgccgccgc ggtgcatcat caactc 236

<210> 210
<211> 278
<212> DNA
<213> Mycobacterium tuberculosis

<400> 210
atactcaagc ttggcggcaa cgccactacc gggctcacca ggtcctgtgc cgccaccgcc 60
ggcgccgaaa gcaccatcag gtcgtagttg tctggacgtt cgacaccgta agcgaacaca 120
atgccgccgc ccatgctgtg cccgagcacg atgcgcttgc acccgggata ttcccgggtg 180
gcgatcccaa cgagggtgtc gaagtcagcg gtgtatctga gatgtctctc actatcatcc 240
gtttggcacc cgagcgggca tgcccgcggg gggtcaac 278

<210> 211
<211> 360
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (303)
<223> a, t, c or g

<400> 211
gtcgacggca tcaaggtccg cagtgatggt gttcatctca cccaggaagg cgtgaagtgg 60
ctgataccgt ggcttgagga ttcggtgcgg gtcgccagtt aatccgccgt gtgctccgga 120
tgagcgcgac ggtaaccctg gaattgtgct gtgtgctggc tgtgtcgttg tgatgagcct 180
gtctaagtgg tgcgtaaccg tttgacgagc cgcggcctcg ctgcaaacat tgaagcccgc 240
acgtctgggt ttgtatttac acaacgaggg cgctccccga tctggcgcgc gcaacgaggt 300
gcncactatc cattcgaggt gaactggact ccttgatgct catgccggtg cggttttgtc 360

<210> 212
<211> 256
<212> DNA
<213> Mycobacterium tuberculosis

<400> 212
atactcaagc ttgcgttcga tgaagtagtc gtcggtcagc gccgcctctt cgagctcctt 60
ggcgatgccc agcaaggagt catcgccgcc gagcttggcc aggatcttgt cggcctgttc 120
cttgacgatg cgggcccgcg gatcgtagtt cttgtagaca cgatgaccga aacccatcaa 180
tttgaccccg gcctcgcggt tcttgacctt gcgttacaaa ctcgctgacg tcgtcgccgc 240
tgtcgcgaat gccctc 256

<210> 213
<211> 262
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (24)
<223> a, t, c or g

<400> 213
ngtcaagccg agcatgcgcg aggnaacgac gaacccaaca agccatggtg gttggcgccg 60
tcgagaggtc ggcggtcgcc acaacgggaa gatcgccttg agcgtcgctc gaccgccgcc 120
tcgagttggg tcataacgaa gtagctgatg ccgatcatgt cgacgtttcc gtcgcatcag 180
cgtgcagcgg cgacccactc gacgaggtct cggtgccgcc gcggccaggg caccagcagt 240
gacgattcca ggcgccgtcg gg 262

<210> 214
<211> 336
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (336)
<223> a, t, c or g

<400> 214
cgataatcgc ttccggtaag tgcagcagct ttacgacggc gactcccatc ggcaatttct 60
atgacaccag atactcttcg accgaacgcc ggtgtctgtt gaccagtcag tagaaaagaa 120
gggatgagat ctccccgtgc gtcctcagta agcagctcct ggtcgcgttc attacctgac 180
catacccgag aggtcttctc aacactatca ccccggagca cttctagagt aaacttccca 240
tcccgaccac atataggcta aggtaatggg cattaccgcg agccattact cctacgcgcg 300
caattaacga atccaccatc ggggccgctg gtgtcn 336

<210> 215
<211> 259
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)

<223> a, t, c or g

<220>
<221> modified_base
<222> (243)
<223> a, t, c or g

<400> 215
naatactcaa gctttctcgt gattaccacc cgtgtaattt gggatgggca aaaaggcgaa 60
tcaccgcgtg gccacaaacg ccgggaggga caatctcggg cggctagggc ttctcgcggg 120
aaggcccgaa cgtacggcgt ttcaacacgt cgcgtcgccc tccgaccgcg aacattcggg 180
gatggcagca acctggtatc accctggccg ggcaatgatc tgcagcgtcg ccgcgggtag 240
tgnccgcccg ggcggctac 259

<210> 216
<211> 325
<212> DNA
<213> Mycobacterium tuberculosis

<400> 216
ccaactagag catcgggaca tacggagtca actacccggc caacggtgat ttcttggccg 60
ccgctgacgg cgcgaacgac gccagcgacc acattcagca gatggccagc gcgtgccggg 120
ccacgatgtt ggtgctcggc ggctactccc agggtgcggc cgtgatcgac atcgtcaccg 180
ccgcaccact gcccggtctc gggttcacgc agccgttgcc gcccgcagcg gacgatcaca 240
tcgccgcgat cgccctgttc gggaatccct cggggccgcg ctggcgggct gatgatcgcc 300
ctgacccctc aattcgggtc caaga 325

<210> 217
<211> 300
<212> DNA
<213> Mycobacterium tuberculosis

<400> 217
atactcaagc ttgctgcagc ttcctgtgac tgctcccgaa acctggggt gtgcctgctg 60
tgtatgcacg gcatacggac atccttcccc tgagacccgc ggtcgaacca gccacgtgtc 120
catcatcagg ggtcaacccc ggccaagggc gacggcacgc caagttcgcc gaccgttaac 180
ctagtgctgt tagcttcatt tgctgcgagc aaaacagctg gtcggccgtt aggaactgaa 240
ttgaaactca accgatttgg tgccgcccgt aagtgtcctg gctgccggtg cgctggtgtt 300

<210> 218
<211> 265
<212> DNA
<213> Mycobacterium tuberculosis

<400> 218
agcttgcgcg gcgtggcgat cgcggttcaa ggcgcgctct tcgagcacaa cgagcgaaga 60
cagctcggcg acggagcctt tatcgacatc cgttcgggct ggctgaccgg cggcgaagaa 120
ctgctggacg cgttgttgtc gacggtgccg tggcgagccg agcgccgtca gatgtacgac 180
cgggtggtcg atgtgccgcg gctggtgagt tttcacgacc tgaccatcga agatccgccg 240
catccgcagc tggcgcggat gcgcc 265

<210> 219
<211> 362
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (101)

<223> a, t, c or g

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<400> 219
aatactcaag cttgcgcacg accaggacgt cgagtggcgc ttgcagtgac ttggcgacct 60
caaaggccac cggtacccg ccgcgcggca agccaaggac nacnacggcc ttgccggata 120
gctgcgccag gcgttgcgcc aactggcgtc cagcgtcgcc acgatcgtca aagagcttca 180
tctgccgagt gtgtcgccat ctcatggctc caaatatgga attaggtccc tgggccgact 240
gacgacagtc cctcagcgac cggattgcgc atcccgcctt gtacgctgct ccgcaaatcc 300
cgggcttgcg tccgcggaag cgaactcggc ggcgctacgg tggtggctca cttcggccgt 360
gc   362

<210> 220
<211> 486
<212> DNA
<213> Mycobacterium tuberculosis

<400> 220
ggttggtgcg gtccaccttc gcggcggcgg cgcgatatgc cttgctggtc ttgctcattt 60
gatatccaat ctatgggtcg tggttactca gcgggccgaa gctggccctc ccacgggtag 120
ggccctattc gacggtgatg cccatcgacc gagcggtacc ggcgatgatc ttggccgcag 180
cgtcgacgtc gttggcgttg aggtccgtct tcttggtctc ggcgatttcg cggacttgat 240
cccaggtgac tttggcgacc ttggtcttgt gcggctccgc cgaacccttc gccacaccag 300
cggccttaag cagcagcttg gcggcgggcg gcgtcttcag cgtgaaagtg aagctacggt 360
cttcataaac ggtgatctcc accgggatga cgttgccgcg ctggttctcc gtcgcggcgt 420
tgtacgcctt gcagaactcc atgatgttga cccgtgctga ccgaacgcgg ggcccactgg 480
cggggc   486

<210> 221
<211> 373
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (229)
<223> a, t, c or g

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

<400> 221
atactcaagc ttttcgaccc gcaagccggc ggtgcccctc ctcgttccgc tgcccggtct 60
gctcgatcgg ttcggggtcg ccgcgctagg cccaattgcc cggctcctcc tcgggccgtt 120
ccacaacccg catcgtcgcc gggctaggtt caagccatgc cggtaaaccc caggacgcca 180
gtgctgatcg gctatggaca ggtcaaccac cgaggcgaca tcgacgccna aaatcagtcc 240
atcgaacccg tcgacctgat ggccnccgcg gcccggaaag ccgccgagtc caccgtgctc 300
gaagcggtgg attccatccg tgtggtgcac atgctgtcgg cgcattaccg gaattcccgg 360
gcgtctcctc ggc   373

<210> 222
<211> 331
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (307)
<223> a, t, c or g

<400> 222
```
ncctggttca tgaactggaa gcagcgcagc gcttcctttt cggccgcaac atgagccagc 60
ctctcgtcgg cggtcgggtg caggtgctcg ggcagctcgg ccgcgacagc cgcctgaccc 120
tgaaaccagc ttccatatcc cgcgacgaac gacgccagtc cgctacgtaa cccctccgcg 180
actgtccatg gacaacagcg cgttctccac cgaccggggc cgggtgttgg ggtgttcggc 240
aacggcaacc aagttggtcc acactgccga cgggcgccgc aaatccgttc accgaaccag 300
gccgccnaaa caattccgcc cgatcccata t                               331
```

<210> 223
<211> 377
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (377)
<223> a, t, c or g

<400> 223
```
atactcaagc ttgtcgggat caatctcgag ggcatccacg cacgaaaagt aaactctatc 60
aagctttttg acgacaccca cggacgcccc atatatgttc gggtgggcaa gaacggtccc 120
tacctggaac gtttggtggc cggcgacacc ggtgagccca cgccgcagcg ggccaacctc 180
agcgactcga ttaccccgga cgaactgact ctacaggtgg ccgaagagct ctttgccaca 240
ccgcaacagg gacggacttt gggcttggac ccagaaaccg gccacgaaat ctttgccagg 300
ggaaggccgg tttgggcctt atgttaccta tatcctgccg gaacctgcgg ctgatgcggc 360
cgcggccgct cagggan                                              377
```

<210> 224
<211> 436
<212> DNA
<213> Mycobacterium tuberculosis

<400> 224
```
agcagctagc cgcgctcgcc gcgctggtcg gtgcgtgcat gctcgcagcc ggatgcacca 60
acgtggtcga cgggaccgcc gtggctgccg acaaatccgg accactgcat caggatccga 120
taccggtttc agcgcttgaa gggctgcttc tcgacttgag ccagatcaat gccgcgctgg 180
gtgcgacatc gatgaaggtg tggttcaacg ccaaggcaat gtgggactgg agcaagagcg 240
tggccgacaa gaattgcctg ggctatcgac ggtccagcac aggaaaaggt ctatgccggc 300
accgggtgga ccgctatgcg cggccaacgg ctggatgaca gcatcgatga ctccaagaaa 360
cgcgaccact acgccattca agcggtcgtc ggcttcccga ccgcacatga tgccgaagaa 420
ttctacagct cctccg                                              436
```

<210> 225
<211> 539
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<222> (18)
<223> a, t, c or g

<400> 225
cgcgactggc tccccggncg gctgctcggg tccgccgata gagaccggga tgtcgcccga 60
cgacgggcag ccgggttgcg tgggacgggg cggggtcgg gcagcccaag caacgggcta 120
gtccccgaat cctacggagc cgtcacctac gcctacgtaa tagtagctat caataacagt 180
tgacatacgc aacgatctgt gagatcaata ttgcctgacg catgtcaaga caggcgtcaa 240
gacaggtgtc aataattcgc tccgctggtg acggtaaccg gtcgtgcggg tgtgtgacgc 300
ctaaggaagg agtgtgggtg gtgacgctga gagtggttcc tgagggtttg gcggccgcca 360
gtgcggcggt ggaggcgttg accgcacggc tggccgccgc acacgctggc gcggcgccgg 420
cgattacggc ggtggtggcg cccgcggcgg atccggtgtc gttgcagaat gcggtggggt 480
ttagcgcctt aagtagccag catgccgcga tcgccggcga aagggtccaa gaactgggt 539

<210> 226
<211> 517
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<400> 226
atactcaagc ttattgaacc gcgggtcgca ggcaaagtgg acctcataac gactcgggtc 60
cagcgaccgc gccaacacga acggccggac gacgtgggcc agggtcgcgg cctcccctac 120
aaacaggatc cgttgcctgc gaacgacagg ctccggtgcg gcgttgggcg ccgtgctcgt 180
cccagcgtcc ggtcccgggt cgccggcgac gcttgtttcc tccatactcg cccctaatc 240
tcgaggcagc ccgtacccgc aggcaacctc ccaaaaatgc aatcccgcaa aatgcaatgc 300
gtcnagctat ttctcacacc gaccgctagt tgcggatcag aaatccgttg ggcgcggaag 360
tccagccgaa tttgttctcc cgctccgcat catgcttgta atcgtttgga aattcatcct 420
catatgcctc gatcgcttca tagggtccag gcccaaaccc gggcaggact gggtggccgt 480
tgatgttgga atcctccact actaggtatt caccggc 517

<210> 227
<211> 488
<212> DNA
<213> Mycobacterium tuberculosis

<400> 227
gtctcgatca tggccaaaga gctcgacgaa gccgtagagg cgtttcggac ccgcccgctc 60
gatgccggcc cgtatacctt cctcgccgcc gacgccctgg tgctcaaggt gcgcgaggca 120
ggccgcgtcg tcggggtgca caccttgatc gccaccggcg tcaacgccga gggctaccga 180
gagatcctgg gcatccaggt cacctccgcc gaggacgggg ccggctggct ggcgttcttc 240
cgcgacctgg tcgcccgcgg cctgtccggg gtcgcgctgg tcaccggcga cgcccacgcc 300
ggcctggtgg ccgcgatcgg cgccaccctg cccgcagcgg cctggcagcg ctgcagaacc 360
cactacgcag ccaatctgat ggcagccacc ccgaagccct cctggccgtg ggtgcgcacc 420
ctgctgcact ccatctacga ccagcccgac gccgaatcag ttgttgccaa tatgatcggg 480
ttctcgac 488

<210> 228
<211> 264
<212> DNA
<213> Mycobacterium tuberculosis

<400> 228
atactcaagc tttcgtcagt tcatggcgcc agcagaccaa caagagcatc gggacatacg 60
gagtcaacta cccggccaac ggtgatttct tggccgccgc tgacggcgcg aacgacgcca 120
gcgaccacat tcagcaaatg gccagcgcgt gccgggccac gaggttggtg ctcggcggct 180

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```
actcccaggg tgcggccgtg atcaagatct tcaccgccgc accactgccc ggcctcgggt 240
tcacgcatcc gtttggccgc cgcc                                        264
```

<210> 229
<211> 229
<212> DNA
<213> Mycobacterium tuberculosis

<400> 229
```
gccccgtgta atttgggatg ggcaaaaagc gaagcaccgc gtggccacga acgccgggag 60
ggacaatctc gggcggctag ggcttctcgc gggaaggccc gaacgtacgg cgtttcaaca 120
cgtcgcgtcg ccctccgacc gcgaacattc ggggatggca gcaacctggt agcaccctgg 180
ccgggcgatg atctgcagcg tcgccgcggg tagtctccgc ccgggccgc              229
```

<210> 230
<211> 266
<212> DNA
<213> Mycobacterium tuberculosis

<400> 230
```
atactcaagc ttcctttgac cgaacgcgtc caccgcaccg tgagattggt ggcgccattc 60
gtcgtggtgt agctgctgtt ggcggcgtcg ccgtattgtg cgggccagcc ttgtgcgggg 120
gccgcttcta cccacaagtc ggcacttccg caaccgccca gctcgaccgc gaattacggc 180
ggccgcaacg gccgccggaa ggcgtcacgc aatcgcttat cctttccagg ttcccaaatc 240
ctccgcttac ttgggtcctt catcgg                                       266
```

<210> 231
<211> 258
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (207)
<223> a, t, c or g

<400> 231
```
ggcagcggcg acaaccggaa cgtccgcacg gtgctcaatc acgggtgcac ggtgtgcatc 60
agaatggcgg gggttcgttg tcgcggtgag gcgttcggcg aggaggtagt gtctacccct 120
tgcccgcggg ttcgtgcgga ctgaaaggga tttcattggg aacccacggc tgcgtatcgc 180
agggcctcgg tgacgtctgc ttcctcnagc tcaggaagtt cggcgagaat ctcggtggat 240
gttatttggt ccgcctac                                                258
```

<210> 232
<211> 224
<212> DNA
<213> Mycobacterium tuberculosis

<400> 232
```
atactcaagc tttctcggct tctctgatag cctgagaaga aaccccaagt taatccgctg 60
cttcacctat tctccagcgc cgggttattt tcctcgcttc cgggctgtca tcattaaact 120
gtgcaatggc gatagccttc gtcatttcat gaccagcgtt tatgcactgg ttaagtgttt 180
ccatgagttt cattctgaac atcctttatt cattgttttg cgtt                  224
```

<210> 233
<211> 333
<212> DNA
<213> Mycobacterium tuberculosis

<400> 233
```
atactcaagc ttggtgaccg gcaccgcgat acgttgcggc aggcatctgg gctggcggtg 60
gttcgccgct ccgaagccgt cgaacaccat cgccagcgcg gcttccacat caacgaccat 120
ttcggccagc ttgcggcgca tcagcggctt gtcgatgagc gccccaccga atgcccgccg 180
ctgcccggcg tatcacatcg attcgaccat cgcgcggcgc gcgttgccga gggcgaacga 240
ggcggtgccc aaccgcaatc tgtttggtca gctccctcat gcgggttgat tccttgccgt 300
ccggacgggc ccgcgtcatg cgctcggttc gcc                         333
```

<210> 234
<211> 407
<212> DNA
<213> Mycobacterium tuberculosis

<400> 234
```
ccgttgcgca gcgtgagccg atagttgaca tccggctcgg tgaaggtgaa atcgatggcc 60
aggtcgaggt cccatgcgcg tgggccattg atgctgatcg ccaggacgtc aaagatttgg 120
tccggcgtca gctgggcgaa aaacgtgggc gccgggactt gcccggagct gcccgggttc 180
ccgtcgcgca gctcggcggc cccggtcaga aagaaattgc gccagctgac acactccgcg 240
ccgtaggcca gctgctccag ggtgtcggca tagagcccgc gggccgcagc gtgctcgctg 300
tcggcgaaca ccgcatggtc gagaagcgtt gccgcccaac gggaaatcac ctgcgtcgaa 360
agcttcgcgg gccagctcca gcactcggtc gatgccaccc aacgcgt          407
```

<210> 235
<211> 389
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (46)
<223> a, t, c or g

<400> 235
```
atactcaagc ttgcggatgt tacccctgac agcgtgaact atgtcnaaac acacggcacc 60
ggaacggtgt tgggggaccc catcgagttc gagtcgctgg cggccactta tggcctgggt 120
aaaggccagg gcgagagccc gtgcgcattg gggtcggtca aaaccaacat cggccacctg 180
gaggcggccg ccggtgtggc tggattcatc aaggcggtgc tggcggtgca acgtgggcac 240
attccccgca acttgcactt cacccggtgg aacccggcca tcaacacgtc ggcgacgcgg 300
ctgttcgtgc cgaccgaaag cgccccgtgg ccggcggctg ccggtccacg cagggctgcg 360
gtgtcatcgt tcggcctcag cgggaccaa                               389
```

<210> 236
<211> 432
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (365)
<223> a, t, c or g

<400> 236
```
ccggtaacca gatcagctcg tcgacctcac tgccgggggt gaattcccca ccggtgctgc 60
gcgctgccca gtagtgcacc ttcttgacgc ctcgaaaagg ggagtcggtc gggtaggtca 120
ccgtcaggag ccgcctaccc aggttggcgc ggtgaccggt ctcctcgagt atctcccgca 180
ccgcccccac cggtgcggtc tcgcccggat ccactttgcc cttgggcagc gaccagtcgt 240
cgtaacgggg gcggtgaatg acagcgatct cgaccggccc ttccgaatcg gcactgccgg 300
gtcgccagaa caccgcaccg gcggcgtaca caatccggcc cgccgagcgc cggcgggcgg 360
acganttctg gatcgacacc tcaactcctg caggtcaatt cggccaagct gctcgcggtc 420
```

gtggatgtgg tc

<210> 237
<211> 287
<212> DNA
<213> Mycobacterium tuberculosis

<400> 237
```
atactcaagc ttgatgccgc cgaaaccgag cgtgagcacg ccgccaccca ccacgcgcgg 60
gtcgggcgcc gggcccgggc cgccaggctg ctccgctcgg tgatggcacg ccaccgcgac 120
accacccggc tgcgctacgt cgagccatac cgggcggagc tacatcggct cggccgccca 180
gtgttcgggc cctctttcga ggtcgaggtc tataccgatt tgcgcatccg cagccgcacc 240
ctggtcgtct cgtaccgtgc cctacctctg cttgtcgggc ggggcca             287
```

<210> 238
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<400> 238
```
tccgtacggc ccgggtacgc ttcggtcgca gtgtgcgagt gatagatgac gaccgggacc 60
tcgtcggcat cttccatagc ccgccacacc ttcagttgct caccggaatc caaccggtag 120
aaggtcggcg agcgctcggc attggtcatc gggatatgcc gctcgggacg gtcagagccc 180
tcgggtccgg ccagcactcc gcaggcttcg tcggggtggt cgcgacgcgc atgggccacc 240
atccatccac caggtctgcg cgaatcaccc gc                          272
```

<210> 239
<211> 410
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<400> 239
```
ggacacattg cgaacattga tgacaaaata gaaatcattg atggtttgag tcaccaggcc 60
gatcaagcct tcgccgagcc aaattccaat caagaggccc aagcccgtac caatcagccc 120
ggcaacgagg gattccgtca ttatcagcca aaataactgc tctcgggtta cacccaaaca 180
gcgcaatatg gcgaaaaacg gtcgccgttg cacgacatta aatgtcacgg tattgtaaat 240
taaaaagata cccaccaaca aggcaatcaa actgagagcg gttaaattga ccgtaaaagc 300
gtccgtcatc tgtttgacgg tgtcccgttg ggtntccgac gtttccatac gcacaccggc 360
cggcagtctt tgttggatgc gtgttgcagt ggcctcatct ttgatgatca             410
```

<210> 240
<211> 439
<212> DNA
<213> Mycobacterium tuberculosis

<400> 240
```
gcctggccca ggtgaaggcc gacctcgacg ccaaagccgc tgatccggca catgagtcgg 60
tggactggga cttgaagtcg ctgcgatggg cgtggaaccg agccaaagat gacgtggcgc 120
cgtggtgggc cgagaattcc aaggagtgct actcgtcggg gttggccgat ctggcccagg 180
gcctggctaa ttggaaagct ggcaagaacg ggacccgcaa aggccggcgg gtgggcttcc 240
cgcgattcaa atccgggcgg cgtgatcctg gcagggtgcg gttcaccacc ggcaccatgc 300
gcatagagga tgaccggcgc acgatcacgg tcccggtgat cgggccgctg cgggccaagg 360
agaacacccg ccgggtgcaa cgccacctcg tgagcgggcg cgcgcagatc ctgaacatga 420
ccttgtcgca gcggtgggg                                         439
```

<210> 241
<211> 356
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (22)
<223> a, t, c or g

<220>
<221> modified_base
<222> (241)
<223> a, t, c or g

<400> 241
taactcaagc ttcaagtccg cngtccgacc ctgttcgacg gctacctgaa tcaacccgat 60
gccccgccgc ggcgttcgac ccgacagctg gtaccgcacc ggcgacgtcg cggtggtcga 120
cggcagtggg atgcaccgca tcgtgggacg cgagtcggtc gacttgatca agtcgggtgg 180
ataccgggtc ggcgccggtg aaattgaaac ggtgctgctc gggcatccgg acgtggcgga 240
ngcggcagtc gtcggggtgc tcgactatta tctaggccag cggatcgttg cctacgtagt 300
cggctcagcg aatgtcgatg cggacgggct tatcaacttt gttgcccaac aacttt 356

<210> 242
<211> 341
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (309)
<223> a, t, c or g

<400> 242
ccatgtcgcc caacatatcg tcgatgttcg cgtcgtccgc ctcgcgcacg tggtctgtca 60
ccagtcaacg ttaacgccgc cgcacatgtc ctgcggccgg gcaaaaacgt gaaaaacgag 120
cgggcgactg caatgtcatg acaccgacgc cgccgatggg cccagggtct ggcagattcg 180
atctgtgcgg ccagtgccag cagcgtcgcc tcgtcatacg gccggccgac gagttgaacc 240
gacatgggca tgccgtcgcc gtcgaagtcc cacggcacca cggccgcggg ctggccggtc 300
agattccana cttgaaagta ctgaagccgc tgcaccacca g 341

<210> 243
<211> 336
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (236)
<223> a, t, c or g

<220>
<221> modified_base
<222> (242)
<223> a, t, c or g

<220>
<221> modified_base
<222> (248)

<223> a, t, c or g

<220>
<221> modified_base
<222> (251)
<223> a, t, c or g

<400> 243
cgaaagcgtg aaacagctcg cggcagcccc cgacgtgctg cgtcggatag ccggcgggcg 60
aagatcaatt ccaggcagct cccggacaat gcggctctgc tggcccgcaa cgaaggactc 120
gaggtcaccc cggtgcccgg ggtcgtggtg cacctgccga tcgcacaggt tggcccacaa 180
ccggccgctt gatgcccggt cggcaagccc ggcagttgcc aaacccagcg tgatcntgct 240
cngctctnta nttcggcgaa gaagtggctc gcctgatcac ctaccatcgg ccaggatctg 300
cgtgtcatca caacgctcgc caaggaggtt gttgtg 336

<210> 244
<211> 337
<212> DNA
<213> Mycobacterium tuberculosis

<400> 244
tccgccacgc ttcgcgccgc ccggcatacg gcgcgtaccg atctccgcgt catacaccgc 60
gggtaatcgc cgacggtgcc ggttcgcgag ccgaaggtga cgacgctgat tgaatcgagt 120
tccaggtcca gcgggtggcg cagcaacggc gcgagctcaa cgacgtcaat cacgttgtcg 180
ctttctacgg tcaccgaccc ggtgaccgta gtcgcccggt gcgctcggcc gagaagctgc 240
accgccacca ccgcgacacc gtcttgcacg cggacccacc ccggatcggt tgttggccaa 300
ggtaattggg tcattccatt tgacgggacg ccgaccc 337

<210> 245
<211> 337
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (162)
<223> a, t, c or g

<400> 245
cattctttaa cagttgtttt gggctcggca tggttagcca acgttctgcg gtccaccata 60
tcatcttggt ccggtagcgc tcgtccgggg tatgctgccg ccgggattct cgctgctatt 120
actcccccg aagaaccgcc accggtccag cgcgtgggcc gncgcggtcc catcacaaac 180
tgaaccccca acagggacat gcttatcggt agggcgcgcg ccaaggcggc agcaatcgca 240
tcactgcgct ctgcgcgtca ctattaaccc acccggactt cacttccacc accccgaatg 300
gcgcccggtc attgatcatc tggcgcaccg cggataa 337

<210> 246
<211> 343
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (267)
<223> a, t, c or g

<400> 246
cggtgtcctg cagttggtag gcctgcagtt tgtgcatcat gccgatgccg cggcctcgtg 60
gccacgcatg tacagcacca cgccgcgccc ctcacgggcg aacatcgcca gcgcggcgtc 120
cagctgaagc ccgcaatcgc agcggcgtga ccaaacacat cgccggtcaa gcactccgaa 180

```
tgcaccggac cagcacgtcg tcaccgtcgg cgttgggccc ggcgatctcg ccgcggacca 240
tgcgcgacat gttccacgtc ctcgtanatg ctggtgtagc cgatggcgcg aaactcccca 300
tgacgagtcg gaatccgcgc ctcggcgacc cgctcaatgt gct            343
```

<210> 247
<211> 340
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (196)
<223> a, t, c or g

<220>
<221> modified_base
<222> (199)
<223> a, t, c or g

<220>
<221> modified_base
<222> (211)
<223> a, t, c or g

<400> 247
```
cggcatctgg cggctgaacc tgttcttggg caacatgccg aggatcgcct cttccaccac 60
gcggtcgggg tggcgttgca ttacctcacc gatggtgcgc ttgtgcaggc cgccgggata 120
ccccgagtgc cggtaaacca tcttgtgctg cagtttgtcg ccgctgatgg cgaccttgtc 180
ggcgttgatc acgatnacna atcaccgcca ncgacattgg gggcgaacgt cggctcgtgc 240
ttgccgcgca gcaggctggc cgccgcgacg caaggcgcca accaccacgt ccgtggcgtc 300
gatgacgtac caccatcgcg tggtgtcacc cgccttgggc            340
```

<210> 248
<211> 322
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (22)
<223> a, t, c or g

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<220>
<221> modified_base
<222> (258)
<223> a, t, c or g

<400> 248
```
gcggcaaaaa ttgaagcact cntggccact nccgccggga gggacaatct cgggcggcta 60
gggcttctcg cgggaaggcc cgaacgtact gcgtttcaac acgtcgcgtc gccctccgac 120
cgcgaacatt ctgggatggc agcaacctgt tagcaccctg ccgggcgat gatctgcagc 180
gtcgccgcgg gtagtcgccc ccgggcggct acagtctgaa acgcgatgac catcgatgtg 240
tggacgccgc atccgacnca acggttccta cactgtgata tgttcgcctc gctgcgccgg 300
tggacggtgg gtctatcccg ga            322
```

<210> 249
<211> 278
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (191)
<223> a, t, c or g

<400> 249
cgcgttgaac tgaaggggtg ccgcccggct cgagcaggca agccatttgt tcgatgcggt 60
taccgaagat ctcttcggtg actgcccgcc gccggccagc tcggctcagt gtccggcgtt 120
ggtcgccgcg gcgacaatct tggcgtccac ggtggtcggg gtcatgcccg cgagcaggat 180
tggcgagcgg ncggtcagcc gggtgaactt cgtcaagagc tgacgctgcg gttggggagg 240
cgaatcatgg tcggtgcgta gcctcgacta ggcccggg 278

<210> 250
<211> 336
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (308)
<223> a, t, c or g

<400> 250
tgacaacgcg gcggcgatta ccccgctacc gcagcagcat gacgcggtag cgaacaccgc 60
cggatgcagc gcaggtgcgt cgatgtgctc acggaatcgc cccggcaccg cgatctcgag 120
gatcaccagt gccaccccct gcagcgcgac accgacgatt ccgtacaccg ccacgccgat 180
caggccctgg gccagctgat tggagctggc gtatatggcg gcgatggtga cgatggtcat 240
cgcctcttac attgtggcgg ccagaaccac ggcgttgggg cggcggtcga tgaacactag 300
gcgaccanat ccccgggggtc aacaggttga ccatcc 336

<210> 251
<211> 95
<212> DNA
<213> Mycobacterium tuberculosis

<400> 251
cgcggacatc ccgaacgagg acacgcgacc gcttcggtgt gtgatctatc agggctcgca 60
ccacgcgcaa ccgcttccgg ctacctagac gcggt 95

<210> 252
<211> 94
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (78)
<223> a, t, c or g

<400> 252
gcatgcgggt gatgccgttc tcagtgcgca acagcgttcg acgcggcata cccagccgca 60
catgccgtgc acgccggngc cggggcggga atct 94

<210> 253

```
<211> 302
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (13)
<223> a, t, c or g

<220>
<221> modified_base
<222> (16)
<223> a, t, c or g

<220>
<221> modified_base
<222> (158)
<223> a, t, c or g

<400> 253
ctcaagcttc agnccntcta agcggtctgc gcggcgatcg caaagatcgc cctttgccgg 60
cgttgggggc ttctgctcgg gggtgttgta caccttctcg aacacctcgg caccgacacc 120
accaccgtcg gcttgaacac cgccaacatc ggcagcanat cttgatgtcc tggtgaatcc 180
acggtgactt tggagtggaa ggcggccata ctgatcgcgc gcgccaccac atgagctagc 240
ggcaggaaaa ccagcagccg ctcacccttg cgcagcagcg tcgggtgata tgcctggcgc 300
cc                                                                302


<210> 254
<211> 291
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (8)
<223> a, t, c or g

<220>
<221> modified_base
<222> (213)
<223> a, t, c or g

<400> 254
agtcgaangt cagtccggtc tcctctccga ctacggccaa gaactggggc gacggtgtca 60
gtgcagaaca gcggaaactg gtggcgccct aggcgagcga acgctcacaa acggcggtga 120
ccgcttctgg tcgtgcacca tcgagccgtg cccagcccgg ccgcgtgccg tcagccgcat 180
ccactggatg cccttctcgg cggtttcaat cangtacagg cgacgttcgc caccatcgtg 240
ccggggcacg gttagcgaga aacgccgact tcaccgattg cctcggtgat g            291


<210> 255
<211> 454
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (175)
<223> a, t, c or g

<400> 255
agcttcgcgg cgtggcgatc gcggttcaag gcgcgctctt cgagcacaac gagcgaagac 60
```

```
agctcggcga cggagccttt atcgacatcc gttcgggctg gctgaccggc ggcgaagaac 120
tgctggacgc gttgttgtcg acggtgccgt ggcgagccga gcgccgtcag atgtncgacc 180
gggtggtcga tgtgccgcgg ctggtgagtt ttcacgacct gaccatcgaa gatccgccgc 240
atccgcagct ggcgcggatg cgccggcggc tcaacgacat ctacggcggc gaactgggtg 300
agcccttcac caccgccggg ctgtgctact accgcgacgg ctctgacagc gtcgcctggc 360
atggcgacac cattggtcgc ggcagcactg aggacactat ggtggcgatc gtcagcctcg 420
gcgccacccg cgtcttcgcg ctgcggccgc gtgg            454
```

<210> 256
<211> 346
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (77)
<223> a, t, c or g

<220>
<221> modified_base
<222> (338)
<223> a, t, c or g

```
<400> 256
agcttcagct gatactcgac cagccccact cgggccaata cgtgaatgtc tagcatcttc 60
acccgttcac gggctantcg agtagtagac attgattagc ctgaacgtac ctccgacgcc 120
agctgacgaa cgggtatgac ggatggattt cgtggtgtcg cgcccgaggt caattcgtta 180
cggatgtatc tcggggccgg atcggggccg atgttggcgg ccgcggcggc ctgggacgga 240
ctatccgacg aactggcggt ggcggcgtcg tggtttgggt cggtgacctc gggcctggcg 300
gatgcggcgt ggcgcggccc gcggcggttg cgatggcncg cgcggt       346
```

<210> 257
<211> 339
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (287)
<223> a, t, c or g

```
<400> 257
ctggtcatgg acgttgctcc ggtagtggct cactgccgat cctcctcgtt gagagtgcca 60
cctcagggtt gggtagggtt gggtactcga aaccaagtta cccaccagta acaccgtcaa 120
aatatatccg ttgcataggt caatgcaagt tgatgtgagc tacattgcac caactaacta 180
accaaccggt tgggttagcg gtgatcctgg ccgtgtcggt cctctcacct gcggtgatag 240
cgatcaaatg aagaatatgc ggagtctagg gcggcagcgc ctggcancgt agatcatcgg 300
ctcacgcgga tgcggcctct tggtacggac atgcgcgcg          339
```

<210> 258
<211> 182
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (78)
<223> a, t, c or g

<400> 258

```
ctcgtgagta gcacccctgt aatttgggat cggcaaaaag gcgaatcacc gcgtggccac 60
gacacgccgg gagggacnat ctcgggcggc tagggcttct cgcgggaagg cccgaacgta 120
cggcgtttca acacgtcgcg tcgccctccg accgcgaaca ttcggggatg gcagcaacct 180
gg                                                                182
```

<210> 259
<211> 213
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (132)
<223> a, t, c or g

```
<400> 259
ggatcaacta ccggccaacg gtgattcttg ggcgccgctg acgcgcgaac gacccagcga 60
cacattcagc agatggccag cgcgtgccgg gccacgatgt tggtgctcgg cggctactcc 120
catggtgcgg cncgtgatcg acatcgtcac cgccgcacca ctgccggcct cgggttcacg 180
cagccgttgc cgcccgcagc ggacgatcac atc                              213
```

<210> 260
<211> 321
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (257)
<223> a, t, c or g

```
<400> 260
aggaccgtca gcacggcgac gtgctactcg ccgagcagtg ggaatcgctc tgcagcaaac 60
cattactctg cgcgacgttc gagatgacct tctgaatgga cggatctacc tgccgcgcga 120
cgacctggac cgcgtatgcg tccgcctccg cctggacgac accggggcac tctatgaccc 180
cgacggacgg ctcgcggtac tgctgcggtt caccgccgac gcccgcacgg tacgcgtcgg 240
gactgcgctg agtccancct cgacgccgta gcgctgctgc tgtgcggcca tgtctggcat 300
ctaccgccgt cgctcccttg a                                           321
```

<210> 261
<211> 334
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (311)
<223> a, t, c or g

<220>
<221> modified_base
<222> (316)
<223> a, t, c or g

```
<400> 261
cgactctgtt ggccactgcg ggtcgatctt gcggccgccc cggtcgtgga acgcccaggt 60
cacccggcgg cgcaccgcgg tcagcgcgtc gttggccagc gtggtcacat ggaagtggtc 120
gacgacgagc ttggcgttgg gcagcagccc gggcgtgcgg atcgccgagg cgtatgcagc 180
ggcggggtcg atggccaccg tactggatgc tctcccggaa ctgcggtgtg cgcgcttgca 240
gccatgccag caccgccgcg ccgccgcggc cttcatgctg cccataaacc ctgataccgg 300
```

ccaggtcgac naaccngtat cccacggtca accc   334

<210> 262
<211> 208
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (208)
<223> a, t, c or g

<400> 262
cacacggacg gcggtgcgga cgcagctgac gcgcatggtg gtcagcatcg cggccggtct 60
gctgttgtat gcctacttcg cgccgcgcaa atgctggtgg gcggcggtgg tggcgctcgc 120
atggctgggc tgggtgctga cccaactctc gaaccacacc ggtgggtggg ctgggctatg 180
gcctgccata tcggcctggt gttctacn   208

<210> 263
<211> 233
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (38)
<223> a, t, c or g

<400> 263
ccgatatccg agccgatagc tggcgggctc gggtggtngc cagcggcgct gcgacgaaag 60
tgtgaccgtc atgaaacaga caccaccggc ggccgtcggc cgtcgtcacc tgctcgagat 120
ctcagcatcc gcagccggtg tgatcgcgct ttcggcgtgt agtgggtcgc cgcccgagcc 180
cggcaaacgc cggcccgaca caaccccgga acaggaagtc cggtcaccgc gcc   233

<210> 264
<211> 320
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (17)
<223> a, t, c or g

<220>
<221> modified_base
<222> (249)
<223> a, t, c or g

<400> 264
gcttcaggac aaattgnatc cctatgcacc cgttgtcacg ccgatgagtg aagactgcac 60
gcaatcgccg gaatccggca aaaccctgca caagcgaaat caaccggagg ctgacaaggc 120
aacgtcggtg atccgtaccg cctggttgga caaacggcag aaggcgcctc gtccggtcca 180
tctacgccga gcacactggt gatagcgcca tcggcatcgg tgcggccacg gtggagacga 240
acgtccgcng gcgtctgggt cagtaacccg ccgaccagtt ctcgggcaag ctggtcaaca 300
tcgggcgcca cgtctccaac   320

<210> 265
<211> 304

<212> DNA
<213> Mycobacterium tuberculosis

<400> 265
gtttggcggc cttattgcac tgaggtcgtc aattgaccca cagcggaaat gccgactatt 60
cgcaggcctc cttcgccttg gctgccggag atgggctccg cgggaaccgc atgcaggtat 120
atgacctcgg tttctcgggt gctaccgcgt gccttgtcga ggatgaactc ggcgttggaa 180
ttgtccagcc ggcccaattc atcgagcgca gattcgtaca catggccggc ggcgacatac 240
cttcaccgtg gatctgctcc acacggaccg ccctgtcggg atctgctcac gggtaaagga 300
atta   304

<210> 266
<211> 217
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (139)..(140)
<223> a, t, c or g

<400> 266
gcgcactcct ccttatcgct ccgctctgca tcgtcgcggc gcggtcaggt gcaaacgcct 60
tcgggggtgg gggtcctgcg gagcacaccg gatacggagc gcaacgcgtc gcgttgtgcg 120
ggcaaacaag tgtgcaggnn ccaatgccat gtccagcagc ttatcagtgt cgaacgtgcg 180
aacgtcgcgc cttcgccggt gcctgaatct ctacaag   217

<210> 267
<211> 174
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (152)
<223> a, t, c or g

<400> 267
cgctgaaagc caccattcgc gggtcgggcg ccgggctcgg gccgccaggc tgctccgctc 60
ggtgatggca cgccaccgcg acaccacccg gctgcgctac gtcgagccat accgggcgga 120
gctacatcgg ctcggccgcc tagtgttcgg gncctctttc gaggtcgagg tcga   174

<210> 268
<211> 144
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<400> 268
tgtaatttgg gatgggcaaa aagcaaanca ccgcgtggcc acaaacgcgg ggagggacaa 60
tctcgggcgg ctagggcttc tcgcgggaag cccgaaacgt acggcgtttc aacacgtcgc 120
gtcgcctccg acgcgaaatt cggg   144

<210> 269
<211> 216

<212> DNA
<213> Mycobacterium tuberculosis

<400> 269
cttgggcaac atgctgagga tcgccttttc accacgcggt cggggtggcg ttgcattagc 60
tcaccgatgg tgcgcttgtt gcaggccgcc gggatacccg agtgccggta aaccatcttg 120
tgctgcagtt tgtcccgctg atggcgacct tgtcgcgttg atacgatga cgaagtcacc 180
gccatcgaca ttggggggcga actcggcttg tgcttg 216

<210> 270
<211> 199
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (191)
<223> a, t, c or g

<400> 270
gcatgcttca ttatctaatc tccagccgtg gtttaatcag acgatcgaaa attcatgcag 60
acggtcccaa atagaaagac attctccagg caccagttga agaggttgat caatggtctg 120
ttcaaaaaca agttctcatc cggattgaac tttaccaact tcatccgttt catgtacaac 180
atttttagaa ncatgcttc 199

<210> 271
<211> 230
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (187)
<223> a, t, c or g

<400> 271
atactcaagc ttgatgccgc cgaaaccgag cgtgagcacg ccgccagcca ccacgcgcgg 60
gtcgggcgcc gggcccgggc cgccaggctg ctccgctcgg tgatggcacg ccaccgcgac 120
accacccggc tgcgctacgt ctatccatac cgggcggagc tacatcggct cggccgccca 180
ttgttcnggc cctctttcga ggtcgaggtc tataccgatt tgcgcatccg 230

<210> 272
<211> 188
<212> DNA
<213> Mycobacterium tuberculosis

<400> 272
tccgtactgg tcgggtacgc ttcggtcgca gtgtgcgagt gatagatgac gaccgggacc 60
tcgtcggcat cttccatagc ccgccacacc ttcagttgct caccggaatc caaccggtag 120
aaggtcggcg agcgctcggc attggtcatc gggatatgcc gctcgggacg gtcagaacct 180
cgggtccg 188

<210> 273
<211> 158
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<222> (127)
<223> a, t, c or g

<400> 273
gttctcgcac gatttcggat tagcgggatg gtctcaattg ggtatgcggg gaaggcgctg 60
acattcgccg cgattagctg tttgatggac cgggggtgat ttttgatcac ggaaatgggt 120
gtttatncag gtcgcacgct ttcatccggg gcggaacg   158

<210> 274
<211> 237
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (83)
<223> a, t, c or g

<220>
<221> modified_base
<222> (181)
<223> a, t, c or g

<400> 274
gggtgtgcct gctgtgtatg cacggcatac ggacatcctt cccctgaaga cccgcggtcg 60
aacagccacg tgtccatcat canggggtca accccggcca agggcgacgg cacgccaagt 120
tcgccgaccg ttaacctagt gctgttagct tcatttgctg cgagcaaaac agctggtcgg 180
ncgttaggaa tgaattgaaa ctcaaccgat ttggtgccgc cgtaggtgtc ctggctg   237

<210> 275
<211> 262
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (39)
<223> a, t, c or g

<220>
<221> modified_base
<222> (97)
<223> a, t, c or g

<220>
<221> modified_base
<222> (122)
<223> a, t, c or g

<220>
<221> modified_base
<222> (130)
<223> a, t, c or g

<220>
<221> modified_base

<222> (144)
<223> a, t, c or g

<220>
<221> modified_base
<222> (222)..(223)
<223> a, t, c or g

<220>
<221> modified_base
<222> (225)
<223> a, t, c or g

<220>
<221> modified_base
<222> (229)
<223> a, t, c or g

<400> 275
actacccggc caacggtgat ntcttggccg ccgctgacng cgcgaacgac gccagcgacc 60
acattcagca gatggccagc gcgtgccggg ccacgangtt ggtgctcggc ggctactccc 120
anggtgcggn cgtgatcgac atcntcaccg ccgcaccact gcccggcctc gggttcacca 180
gccgttgccg cccgcagcgg acgatcacat cgcttttatt tnntnttcng gaatccctcg 240
ggccgcgctg gcgggctgat ga 262

<210> 276
<211> 222
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (10)
<223> a, t, c or g

<220>
<221> modified_base
<222> (160)
<223> a, t, c or g

<220>
<221> modified_base
<222> (198)
<223> a, t, c or g

<400> 276
acgtcgggan actgttcgcg ttcatcctcg tctcggcgga ttggtctgct gcgccggacc 60
gaccgatctt cagcggggggg tcacgctccg tggggtgccg ttacttccga tcgcccagtg 120
tgcgcgtgct gtggctgatg ctgaacctca ccgcgttgan ttggatcggt tcgggatctg 180
gctggtggcc ggaacgcnat ttatgtcgct acgggcgccg gc 222

<210> 277
<211> 166
<212> DNA
<213> Mycobacterium tuberculosis

<400> 277
gctcaaaggc actactggca ccaaggccca cacgtcacct gtgactcctg cgccgacccg 60
cccgaggtct ggccgttaca ccgaacgggc gagccgggag ttggtaccat cgaacaagac 120
aaggtgcatg ggcggagttg ttccgccact tcgtcgatga cgggtc 166

<210> 278
<211> 330
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (268)
<223> a, t, c or g

<220>
<221> modified_base
<222> (273)
<223> a, t, c or g

<400> 278
cgataccggc tgcttaccga gacatccacc atgccacccg aatcaccgca cgcgccgaaa 60
tcgcacaaca gcttgacgcc ttgcaggttc cgcgattgga attgccgacg gtctctgacg 120
gcgtcgacct tggcagcctc tacgagctct cggaatcact tgcccagcag ggggttcgat 180
gagtgtcaca ccgaagacct cgatatgggc gcaatcctgg ccgacacatc caaccgggtg 240
gttgtgtgct gcggcgccgg tggggtcngc aanacactac cgcggccgcg ctggcgttgc 300
gcgcggccga atatggccgc actgtggtcg 330

<210> 279
<211> 332
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (169)
<223> a, t, c or g

<220>
<221> modified_base
<222> (213)
<223> a, t, c or g

<220>
<221> modified_base
<222> (227)
<223> a, t, c or g

<220>
<221> modified_base
<222> (230)
<223> a, t, c or g

<400> 279
cgtcgtcgtc gtggtatgcg atagccatcc cgtcgggcta ctcgccatca ccgatcagct 60
tcgccccgaa gccgccgcgg cgatttccgc tgcgaccaaa ctgaccgggg ccaaaccggt 120
attgcttacc ggcgacaacc gggccaccgc cgatcggctc ggtgtacang ttggcatcga 180
cgacgtacgg gccgggctac tgccgacgac aangtcgcag ccgtgcngcn gctgcaagct 240
ggaggtgcca gattgaccgt ggtcggtgac ggtatcaacg acctccggcc ttagcggccg 300
cgcatgtcgc atcgccatgg gcagcgcccg ac 332

<210> 280
<211> 222
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (43)
<223> a, t, c or g

<220>
<221> modified_base
<222> (54)
<223> a, t, c or g

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<400> 280
gcacgcaatc gaagtcaccc aaaccgggcg ggccaggcgt ctnacgccac gtcnaccagc 60
cgcaacctca acccggccac ggcgagctcc tgatcaaggc cgaggccatc ggtgtctact 120
tcatcgacac ctacttccgc tccgggcaat atccgcgcga actcccgttc gtcatctgct 180
ccgaagtatg cggcacggtg gangccgtcg gccaggggtt ac 222

<210> 281
<211> 184
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (140)
<223> a, t, c or g

<220>
<221> modified_base
<222> (143)
<223> a, t, c or g

<220>
<221> modified_base
<222> (172)
<223> a, t, c or g

<400> 281
tcgactgtgt ggccacagat cacgccccgc atgccgagca cgagaaatgc gtcgaattcg 60
ccgcgggccg gccggcatgc tcgggttgca gacggcattg tcggtggtgg tgcatacaat 120
ggtggcgccg gcttgttgan ttnggcgcga tatcgcgcgg gtgatgagtg anaaccggcg 180
tgca 184

<210> 282
<211> 409
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (46)
<223> a, t, c or g

<220>
<221> modified_base
<222> (137)

<223> a, t, c or g

<220>
<221> modified_base
<222> (144)
<223> a, t, c or g

<220>
<221> modified_base
<222> (375)
<223> a, t, c or g

<220>
<221> modified_base
<222> (409)
<223> a, t, c or g

<400> 282
gaacctgaca ccctggtcac gggtgagcac ggacttgatt tcttcnctat tggtcggcgc 60
tgttgagcac accacgccgc tgacggccgt cgcgtcctcg ctgtgctcgg tctggtggag 120
cgcgctgccc gcggccnaac atcntaaatc aagcgtattc gtcaacagat atcatcaatg 180
tcggcgctgg actattcaaa tcatcgatat actggtgacc tggtccttcg ccatcgatca 240
atggcgatag tcacgcaaat cgtcacggac atcgtcggcg tcccagctgg cccgtgccaa 300
cagatgctgc aacccatcgg ggtggtatca ccgcggtgct cggcgatggt ccacaattct 360
tgcggtccaa gcccnaaaca tcccgggcat gaattcaccg gcatgcgcn 409

<210> 283
<211> 413
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (77)
<223> a, t, c or g

<220>
<221> modified_base
<222> (322)
<223> a, t, c or g

<400> 283
ctatcgtacc cgcgccggtc accttctgga tatcgccggc ctggtcaagg gggcgtccga 60
gggagccggg ctgggtnaca agttcctggc tcatatccgc gaatgcgacg ccatttgtca 120
ggtggtgcgg gtgttcgtcg acgacgacgt gactcatgtc accggacggg tcgatcccca 180
gtccgacatt gaggtcgtcg agaccgagct gatcctggca gatctgcaaa ccctggagcg 240
ggccacgggc cggctggaga atgaagcgcg caccaacaag gcgcgcaagc cggtctacga 300
agcggcactg cgtgcccagc angtgctcga cgccgggcaa gacgctgttc gccgcggggg 360
tggatgccgc cgcgttgcgc gactgaaact gctgaccacc aagcccttcc tgt 413

<210> 284
<211> 283
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (216)
<223> a, t, c or g

<400> 284

```
tactcaagct tcaggccgcc acgtccgccg tccgtcggcg acgtgacctc gagcgccgag 60
ttcgactcga catcgccgcc ggcgcatgcc gacatgaacg cggcactcac cgcaagcccg 120
tcggacgtca ggtcgatcga ctccgcttca agcaccggat cgtccgggca actcgcggcc 180
tcggcctgtg cgaacggcac acccgtcgtg gcggcncccc gcgcggaact gggctcatca 240
cggtcgttgc gagccggtcg cgtcaccgcg taccgacgcc gtc            283
```

<210> 285
<211> 397
<212> DNA
<213> Mycobacterium tuberculosis

<400> 285
```
ccgacatcga gtgggctcgc agtgacttgg cgacctccaa gccaccggta cccgccgcgc 60
ggcaagccaa ggacgacgac ggccttgccg gatagctgcg ccaggcgttg cgccaactgg 120
cgtccagcgt cgccacgatc gtcaaagagc ttcatctgcc gagtgtgtcg ccatctcatg 180
gctccaaata tggaattagg tccctgggcc gactgacgac agtccctcag cgaccggatt 240
gcgcatcccg ccttgtacgc tactccgcaa atcccgggct tgcgtccgcg gaagcgaact 300
cggcggcgct acgtggtggt tcacttcggc cgtgcgcact cggatcgacg gccgatggt 360
ggccgggccc gcgcgcttct tggtcatccg attgagt            397
```

<210> 286
<211> 342
<212> DNA
<213> Mycobacterium tuberculosis

<400> 286
```
atactcaagc ttgtcgcggt aaaccgcacg cagggcggtg ggtgcggtgt caaagacacc 60
cacacttctt tgcggttcgg tgatctcgac accggccgcg agccgaccac catgcgcgcg 120
tagatcggcg atcagcgcgt cggctatcgc ctgggtgccg cccaccggaa tcggccagcc 180
gaccgaatgg ccagcgttg ccagcatcag tccggcgccg gccgacacca gtgacggcaa 240
cggtgaaatc gcgtgggcgg caacgccggt gaacaacgcg cgggcatcct cgcccgccaa 300
cgaccgccag gcagggtgcc tgggccatca tccgcagccc ga            342
```

<210> 287
<211> 430
<212> DNA
<213> Mycobacterium tuberculosis

<400> 287
```
tggactcata acgatcgggt cagcgacgcg ccaacacgaa cggccggacg agtgggccag 60
ggtcgcgcct cccctacaaa caggatccgt tgcctgcgag cgacaggctc cggtgcggcg 120
ttgggcgccg tgctcgtccc agcgtccggt cccgggtcgc cggcgacgct tgtttcctcc 180
atactcgccc cctaatctcg aggcagcccg tacccgcagg caacctccca aaaatgcaat 240
cccccaaaat gcaatgcgtc gagctatttc tcacaccgac cgctagttgc ggatcagaaa 300
tccgttgggc gcggaagtcc agccgaattt gttctcccgc tccgcatcat gcttgtaatc 360
gtttggaaat catcctcata tgcctcgatc gcttcatagg tcaagcccaa acccggcagg 420
atgggtggcc            430
```

<210> 288
<211> 473
<212> DNA
<213> Mycobacterium tuberculosis

<400> 288
```
ctttacactt tatgcttccg gctcgtatgt tgtgtggaat tgtgagcgga taacaatttc 60
acacaggaaa cagctatgac catgattacg ccaagctatt taggtgacac tatagaatac 120
tcaagcttag tggttgcgca cgtaaattcg tcaggtgacc gatcccctgc tgtctcactc 180
gcctcacagc gaccaccacg gctggcgctc aaggcgggca cgtgcggagc agatgaggaa 240
tgtgcgacgt cttgatgcag cctgtcagaa caccgagacc ctcgacgaac ttacgatcga 300
```

aaccgcttag gccaaccggt gacggggggtg tctttccgcg gctagggcgc cttatcgtcc 360
gaaggccgtg ggtggtgatc gccttctggg tcgcgcttgc gggtctgctt gcgccgacgg 420
tgccgtccct ggaccgatct cccagcggca tccagtggcg attctgccat cgg   473

<210> 289
<211> 418
<212> DNA
<213> Mycobacterium tuberculosis

<400> 289
caggcatgca agcttgcgat gtatcaacac gccgttgcgc agcgtgagcc gatagttgac 60
atccggctcg gtgaaggtga aatcgatggc caggtcgagg tcccatgcgc gtgggccatt 120
gatgctgatc gccaggacgt caaagatttg gtccggcgtc agctgggcga aaaacgtggg 180
cgccgggact tgcccggagc tgcccgggtt cccgtcgcgc agctcggcgg ccccggtcag 240
aaagaaattg cgccaggtcg cacactccgc gccgtaggcc agctgctcca cggtgtcggc 300
atatagcccg cgggccgcag cgtgctcgct gtcggcgaac accgcatggt cgagaagcgt 360
tgccgcccaa cggaaatcac tgcgtcaaag cttcgccggg ccactccagc actccgtc   418

<210> 290
<211> 194
<212> DNA
<213> Mycobacterium tuberculosis

<400> 290
atactcaagc ttgaccgacg ctgatcgcac cgcacgcggg aacctcaagg gcactactgg 60
cacaagggcc cacacgtcaa cctgttaact cctgcgccga ccccggccga agtccttggc 120
gttaacaccg aacgggccaa cccgggaatt tgggttccat caaaacaaat agcaggtgcc 180
tgggcggagt gttc   194

<210> 291
<211> 166
<212> DNA
<213> Mycobacterium tuberculosis

<400> 291
gtcgtcgtgt gctggggcgt ccgtatcagc acgcccacga aatggggcac aagaaggatt 60
cctggaacgg tggctgtcca agatcaccct cgcccaaaac tgctacgggc acttctacat 120
cgagcacaac cgtggccatc acgtccgcgg tgtccacacc gggagg   166

<210> 292
<211> 291
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (288)
<223> a, t, c or g

<400> 292
atatgccttg ctgagctttt cggatcgcag cgagtcgtac ccgcgccggt caccttcgtg 60
gatatcgccg gcctggtcaa ggggggcgtcc gagggagccg ggctgggtaa caagttcctg 120
gctcatatcc gcgaatgcga cgccatttgt caggtggtgc gggtgttcgt cgacaacgac 180
gtgactcatg tcaccggacg ggtcgatccc cagtccgaca ttgaggtcgt cgagaccgag 240
ctgatcctgg cagatctgca agccctggag cgggccacgg ggcggctnga a   291

<210> 293
<211> 442

<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (323)
<223> a, t, c or g

<400> 293
```
gacaccctgg tcacgggtga gcaggactcg atttcttcgc tattggtcgg cgctgttgag 60
gcacagcacg ccgctgaggc cgtcgcgtcc tcgctgtgct cggtctggtg gagcgcgctg 120
cccgcggccg aacatcgtaa atcaagcgta ttcgtcaaca gatatcatca atgtcggcgc 180
tggactattc aaatcatcga tatactggtg acctggtcct tcgccatcga tcaatggcga 240
tagtcacgca gatcgtcacg gacatcgtct gcgtcccagc tggcccgtgc caacagatgc 300
tgcaacccat cggggtggta tcnccgcggt gctcggcgat ggtccaacaa ttcttgcggt 360
ccaagcccga aaccatccgg ccatgagttc accggcatgg cgcaacggct ggtgccgggc 420
aaaacgcggc gcgatcgaat tc 442
```

<210> 294
<211> 150
<212> DNA
<213> Mycobacterium tuberculosis

<400> 294
```
tgtagaaggt gggtcccgtc caacttcgcg gcggcggcgc gatatgcctt gctggtcttg 60
ctcatttgat atccaatcta tgggtcgtgg ttactcaacg ggccgaagct ggccctccca 120
cgggtagggt cctattcgac ggtgatgtcc 150
```

<210> 295
<211> 321
<212> DNA
<213> Mycobacterium tuberculosis

<400> 295
```
cccgaatccg gtggccggca gggggcctgg cgacgtggac accttctaac ttgtctttac 60
cggtcactgt tgcaccccaa cacctttaac gacgtggacg gacgttacat cggattcgac 120
ggtgtcatcc acagcgttgc cattgggcac acccactacg ccaatttctc cgactgggac 180
acctaccgca gcctcgcccc actgcaggga ctgttgttcc cgcaacgggc catcgacatg 240
atccagtcgt tggtgaccga cgcggagcag actggtgcgt atccgcgttg ggcgctggcg 300
aaattccgcc accggcatga t 321
```

<210> 296
<211> 184
<212> DNA
<213> Mycobacterium tuberculosis

<400> 296
```
ttgagatgct ggtcgggatg ccgatggttg gaacatggtc ccctggcgtc gaatacgcgc 60
gagcgcatga gctcaccggt tcggaacaac gtatcgaaga actcgcactg ctggcagatg 120
gtatctccga tgtggttgta atttgtatcc caactctaac tgtgctatcg gatctgcgtg 180
aata 184
```

<210> 297
<211> 259
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<222> (225)
<223> a, t, c or g

<220>
<221> modified_base
<222> (227)
<223> a, t, c or g

<400> 297
cgtaatcacg atcccgctga gacacttgac cttacggccg aagtgacttc gctgctgcta 60
tgccgacacc cgatttccat acgctgctgt acacgacggc cgggccggtg gcctccatca 120
cgctcaaccg cccggaacag ctcaacacca tcgtcccgcc catgcccgac gagatcgagg 180
ccgctatcgg gttggtcgaa cgcgaccagg acatcaaggt catcntnctg cgcggtggcg 240
ggcgcgcctt ctccggcgg 259

<210> 298
<211> 369
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (296)
<223> a, t, c or g

<220>
<221> modified_base
<222> (324)
<223> a, t, c or g

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<400> 298
caagcttaag ctggttccgg ccactccatg agccgtagtg caatggttcg tgcacggcga 60
ggccgaactt gccataaaca tccctgacga aagtctccgg caagccgatt gcttcttcgg 120
gccgcttctt gtggattgtc cgataacccg gtccctcatg ctggaagttg tgcgcactct 180
ttccttccgc gatgtgggct aacgactcgt cattgagcaa gaagtacgtg cacaggcatc 240
gtccgccggg cttcagcacg cgggagatct cgtccagata gtgctccacg tccggnggga 300
aacatgtggg tgaacaccga ggtnagaaac accncatcca acgacgcatc cgggatatgg 360
aaagcgaaa 369

<210> 299
<211> 387
<212> DNA
<213> Mycobacterium tuberculosis

<400> 299
tatggtcttc gtcgaccagt acgtcgtagg cgccatgagc cagcgactga agccgcgcca 60
tgcctgcacg gcccgctcat ccagcgaggc ggccatctcc cgcagatagc ctgccgcctc 120
ggcgcgcacg ctgtccggat cgcgtccgag ctcgtcggcc agcgcacgca gccgctcgtc 180
ataccatcgg gcatccagca gttgggtaac ctcaacgggg tcggtcgcta gcggcgtcat 240
tgattcagca acaataccga tgcgctgcag caactttcgc agtccgatgc ggcccacctc 300
ccgtgcagtc actggctagc ccccgtcatg ccggttgtgt cgatggcacg gcagcgggct 360
cgtaaacctg cggtctcagc tcgctgg 387

<210> 300
<211> 73

<212> DNA
<213> Mycobacterium tuberculosis

<400> 300
gcttagcggt cttgctcgaa ccgacattgc gtgccactca tgagcgggtg gcggtcgcgg 60
tgcttacaca tct   73

<210> 301
<211> 156
<212> DNA
<213> Mycobacterium tuberculosis

<400> 301
gtatctggcg cctctcgaat atccttgaac gtcccgcggt gccacccaga tagatcgcag 60
cgccctgcaa tggagttccc tttatggcct ctctagcctc ccgcttgatc ggctcgaccc 120
gagagatgcc ctcgggcgtt gcgggatctc cctcca   156

<210> 302
<211> 394
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (341)
<223> a, t, c or g

<220>
<221> modified_base
<222> (347)
<223> a, t, c or g

<220>
<221> modified_base
<222> (349)
<223> a, t, c or g

<220>
<221> modified_base
<222> (361)
<223> a, t, c or g

<400> 302
cttcacgccg atccgcgacc gcgaacgcga cggtgacggt gggcgacaag gttcggttgg 60
tcgccgcggc gctgggcgat atcagctcac ccggtttcga ggtgttcggc gaccggacgg 120
tgctgcagac attcttgagc gtcctcgacc ggcccgattc ggccttcaac atcgtgacgc 180
cgtatttcgg cggtaccgct cggcgccgag tcgaaggcgg cctgagctaa agccgggcat 240
tgcgcgagtg gtaaacaagt tcggtgactt cggttgaccg actcgacggg ctcgatctgg 300
gcgcgctgga ccggtatctg cgttcgctgg ggatcgggcc naccgcnant tgcgttgcga 360
nctgattccg gtggagctcc aatctgactt ccgg   394

<210> 303
<211> 404
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (106)
<223> a, t, c or g

<220>
<221> modified_base
<222> (170)
<223> a, t, c or g

<220>
<221> modified_base
<222> (298)
<223> a, t, c or g

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<220>
<221> modified_base
<222> (346)
<223> a, t, c or g

<220>
<221> modified_base
<222> (373)
<223> a, t, c or g

<220>
<221> modified_base
<222> (401)
<223> a, t, c or g

<400> 303
gcagctaccg accctagcga cgagtgtgtt cgcagcgtcg aatgtgaacg ttcggcgtga 60
ttcggcgcgc gggttcccgc tctcagcgca cgttcggcgc cgaggnggct agtccctggt 120
taagcaatgt ctcggtcgcc gccagcagcg cgcatgtcgc caacccgtcn accgcgttgc 180
gcatgtccgga taccgacgga aacgacggcg cgatccggat gttcttgtcg tccggatcct 240
ttcgatacgg gaacgacccc ccgcctcggt caccgcgata ccaacgtcct tagccaangc 300
tacngtccgg cgcgcggtcc cgggcaacac gtcgaagctg atgaantaac cacccttggg 360
ctcggtccaa gangcgatct tggactcctt aaccgctgat ncaa 404

<210> 304
<211> 479
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (262)
<223> a, t, c or g

<220>
<221> modified_base
<222> (398)
<223> a, t, c or g

<400> 304
tccccatcgg cgccggaccg tttgaaagtc caagcacggg tgggatggaa tcgacgacag 60
ttgagcgccg tcggtggccg tggtcagcag ctgttcgcga acgcaccagg tcacatccct 120
tcgacatctc accgacgtgg cacgggcgac atcaacagga agattgacga atccctcgca 180
ggcgcggcac gtccgcaggc caacgccaac tacggggcca ccagcgatcc tccgctcacg 240
caccagccca agccaggctc anccacccaa gtcggcccgc gctctccctc gccccctggt 300
ctccggggcc ttgttaaaca actaccggaa gtccaccaat cctcgctgca tctcgacacc 360

```
gtccgcctca ctcccttcct cccgcccctc tccacacnac acacctcttg cattaaggtc 420
acggagcggt cactttcgt cggacgaaat tcgcaatccg gccgctcgcc gccagagat 479


<210> 305
<211> 260
<212> DNA
<213> Mycobacterium tuberculosis

<400> 305
cggaaagtgg atactcccag caggtagcag gtcgccacca cgctggtcag tgcgcgttca 60
gctcgcttgc ggcgctgcag cagccagtcc gggaaatagc tgccctggcg cagcttgggg 120
atcgcgacgt cgatggttgc ggcacgggtg tcgcaaatca cggtggcggt agccgttgcg 180
ctgattggac cgctcatcgc tgcgttcgcg gtagcccgcc ccgcacaggg cgtcggcttc 240
agcccccatc aaggcggcga                                              260


<210> 306
<211> 464
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (38)
<223> a, t, c or g

<220>
<221> modified_base
<222> (102)
<223> a, t, c or g

<220>
<221> modified_base
<222> (270)
<223> a, t, c or g

<220>
<221> modified_base
<222> (383)
<223> a, t, c or g

<220>
<221> modified_base
<222> (456)
<223> a, t, c or g

<400> 306
ggccgagtcc agcacttcgc actatgtgca gaccaaanac ccggtggtcg ccgcgctgcg 60
gcagcggctg gcaacggcgc cggtgatcac cgagtggtgc gnagttgccg accggcagtt 120
cgccgcgggc ttactacgag aagggcctgc gcgacgtcat caggtatcac gtgtcgatga 180
cgtcgagcgt taacttcccc gaccagacgg cgacctcgcc gatggacccc gcgttgtacc 240
tggtgtgggc gcaagctaac gccgccgcan gctatcggta ctcggtcgaa gcgcagccgg 300
ggtcgcaagc gctagcgggc aaggtcgcga cgatctcggt cacctggacc aactacggcg 360
ctgctgccgc caccgaatag tgngtgcccg gctaccggct ggtggattcc acgggacatg 420
tggttcggac ctgccggcag cggtggaact gaagangctg gtct                  464


<210> 307
<211> 315
<212> DNA
<213> Mycobacterium tuberculosis
```

<220>
<221> modified_base
<222> (286)
<223> a, t, c or g

<220>
<221> modified_base
<222> (315)
<223> a, t, c or g

<400> 307
agcttcaagg acatcgtcat cgcgaccaaa accgcgagct aggtcggcat ccgggaagca 60
tcgcgacacc gtggcgccga gcgccgctgc cggcaggccg attaggcggg cagattagcc 120
cgccgcggct cccggctccg attacggcgc cccgaatggc gtcaccggct ggtaaccacg 180
cttgcgcgcc tgggcggcgg cctgccggat caggtggtat atgccgacaa agcctgcgtg 240
atcggtcatc accaacggtg acagcagccg gttgtgcacc atcgcnaacg ccacccggt 300
ctccgggtct gtcan 315

<210> 308
<211> 331
<212> DNA
<213> Mycobacterium tuberculosis

<400> 308
gctcgcggtc cagcagcaga cgtgtctgac cccgacgccc ggccgccggt accgaaaccg 60
gatcggcccg ccgatggccg cggccacggc gtctgcctta cccggcccgg ataccagcag 120
ccacacctcg cgggaacgct gaatcgccgg cagggtcaag gtgattcggc gtggcggcgg 180
tttcgcgaat cgtccaccgc caccaccatg cgggtgctct cgaagacgcg gggctgtgcg 240
ggaacagcga gttaatgtgg ccctcgggcc ccatgcccag caggtggacg tcgaaattcg 300
gcccgggtca cctggtgcgg cactggcggc c 331

<210> 309
<211> 286
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (109)
<223> a, t, c or g

<220>
<221> modified_base
<222> (268)
<223> a, t, c or g

<220>
<221> modified_base
<222> (284)
<223> a, t, c or g

<400> 309
agcttgtcga tcgtccggca gcgtccggcg agtcaagtcg aagccagtcc ggtctcctct 60
ccgactacgg ccaagaactg ggcgacggtg tcagtgcata ccagcggana ctggtggcgc 120
cctaggcgag cgaccgcctc acaaacggcg gtgaccgcgt tctggtcgtg caccatcgag 180
ccgtgcccat cccggccgcg tgccgtcagc cgcatccact ggatgccctt ctcggcggtt 240
tcaatcaggt acaggcgacg ttcgccanca tcgtgccggg gcangg 286

<210> 310
<211> 331

<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (14)
<223> a, t, c or g

<220>
<221> modified_base
<222> (210)
<223> a, t, c or g

<400> 310
```
ttggtgatca tcgncccaac gaccccgagg cgatgttctt gcacaccgag gagtgtcgca  60
agctggggct ggccttcgcc gccgatccgt ctcagcagct ggcgaagctg tcggggtgag 120
gaaattcgca ggctcgtcaa cggtgctgct tacttgttca ccaacgacta ctaatgggat 180
ctgctgctgt ccaagaccgg ctggtcagan gccgatgtga tggcgcagat cgacctgcgg 240
gtgaccacat tgggtcctaa gggtgtcgat ttggtagaac ctgacgcacc accatccacg 300
tcggcgttgg tccccgaaac agccagaccg a                                 331
```

<210> 311
<211> 458
<212> DNA
<213> Mycobacterium tuberculosis

<400> 311
```
ggctcgtatg ttgtgtggaa ttgtgagcgg ataacaattt cacacaggaa acagctatga  60
ccatgattac gccaagctat ttaggtgaca ctatagaata ctcaagcttg attttgatca 120
tcatgatgat catcacccga agtgtggtag ccgcagtggt tatcgtgggt accgtcgtgc 180
tttccatggg cgcctctttc gggctttccg tattggtctg gcaggacatt ctgggtatcg 240
agttgtactg gatggtgttg gcgatgtcgg tgatcctgct cctggcggtg ggatccgact 300
acaatctgct gctgatttcc cggttgaaag aggaaattgg ggccggattg aacaccggaa 360
ttatccgtgc catggctggt accgggggag tggtgacggc tgccggcatg gtgttcgccg 420
ttaccatgtc gttgtttgtg ttcagcgatt tgcgaatt                         458
```

<210> 312
<211> 289
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (277)
<223> a, t, c or g

<400> 312
```
caggcatgca agcttggcgt gccgttccaa cccgaattgg ctttcggcgc catcggtgag  60
gacggcgtgc gggtgctcaa cgacgacgtc gtccgcggga cacacctcga tgctgccgcc 120
atggacgcgg tcgaacgcaa gcagctgatc gagctacaac gccgcgcgga acgcttccgc 180
cgcgggcgtg accgcatccc gttgaccggg cggatcgcgg tgatcgtcga tgacggcatc 240
gccaccggag cgacggccaa ggcggcgtgc caggtcnccc gggcgcacg              289
```

<210> 313
<211> 154
<212> DNA
<213> Mycobacterium tuberculosis

<400> 313
```
ggcatcttgg ccgccatgtt agccacactg ccaccggcta tagaagcgat gcgcaccgtc  60
```

ctgccagcac attgcggcgc tcctccctgg aaagcaagat aaccaagctc atgccgtggt 120
tgtgggtggc gtggtttggt ttgggtaact ttgg 154

<210> 314
<211> 324
<212> DNA
<213> Mycobacterium tuberculosis

<400> 314
tcggctaata atcgtcgacg ccggcctcct ctgcaatcgc cttggcggtc gccgggttgt 60
caccggtgat catcacggtg cggatgctca ttcggcgcat ttcgtcgaat cgttcccgta 120
tgcccacctt gacgatgtcc ttcagatgga cgacgccgat ggcccgcgcg ctgctgttat 180
cggtccattc cgcaacgact aggggtgtcc cccgccggag ctgatgccgt cgacaatggc 240
acccacctcc tcggtggggt gggcaccgtg atcgcgaacc cacttcatca ccgcagccgc 300
ggcaccttgc ggattcgacg gatg 324

<210> 315
<211> 322
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (65)
<223> a, t, c or g

<220>
<221> modified_base
<222> (91)
<223> a, t, c or g

<220>
<221> modified_base
<222> (117)
<223> a, t, c or g

<220>
<221> modified_base
<222> (303)
<223> a, t, c or g

<220>
<221> modified_base
<222> (312)
<223> a, t, c or g

<400> 315
ctcaagcttg gaggcgtggc gatcgcggtc caaggcgcgc tctccgagca caacgagcga 60
agacngctcg gcgacggagc ctttatcgac ntccgttcgg gctggctgac ggcggcnaaa 120
taatgctgga ctcgttgttg tcgacggtgc cgtggcgagc cgagcgccgt cagatgtacg 180
accgggtggt ctatgtgccg cggttggtga gtttccacga cctgaccatc gaagatccgc 240
cgcatccgct gctggcgcgg atgcgccggt ggctcaacta attctacggc ggcgaactgg 300
gtnatccctt cnccaccgtc gg 322

<210> 316
<211> 404
<212> DNA
<213> Mycobacterium tuberculosis

<400> 316

```
cctaggtcaa ccgtaccgtc atcggatcgg ggtcgaccgc acagatggac tggagcttcg 60
gcgaggtcat cgcctatgcc tcgcggggggg tgacgctgac cccgggtgac gtgttcggct 120
cgggcacggt gcccacctgc acgctcgtcg aagcacctca ggccaccgga aatcattccc 180
gggctggctg cacgactgcg acgtggtcac cctccaggtc gaagggctgg gcgagacgat 240
gcagaccgtc cggacgagcg gcactccttt tccgttggct cttcggccga atccggacgc 300
cgaacccgac cggcgcgggg tcaacccggc accgacgcgg gtgccgttta cccgcgggct 360
gcacaaatcc cgacgggtat gggctttgac ctgccgacgg ggga         404
```

```
<210> 317
<211> 346
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 317
agcttggcgt gacaccaaca cagggcactt aagatggcaa tgcgccgcct acctgcacgt 60
tttcgcgatg tcagaggatg ccgaggggag aacaatgcga gcacggccgc tgacgttgct 120
caccgctttg gcggcggtga cattggtggt ggttgcgggc tgcgaggccc gagtctaggc 180
cgaagcatat agcgcggccg accgcatttc gtctcgaccg caagcgcgac ctcagccgca 240
gccggtggag ctactgctgc cgccatcac gccgcctagg gctccggcgg cgtcgccgaa 300
cgtcgggttt ggcgaactgc ctacccgggt ccggcaggca accgat      346
```

```
<210> 318
<211> 333
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 318
tcatgccgtt ggaccgacca tcggagttag ttgccgaacc gcgggaccac cgcaagcacc 60
cggtcctggt cgcgcaccgc gtcggccaac cgcttgagca ccaccacgcc gcagccctcg 120
ccgcgcacga atccatccgc gttggcgtcg aagctgttgc atcggccggt cggtgacagc 180
gccgaccact tggacagcgc gatggcggtg aacggtgaca aggtgagctg caccccgccc 240
gccaatgcca cgtcggtttc acgcaggcga agctctgaca cgccaagtga attgccacca 300
gcgacgacga acaagcggta tctacggcga tgg           333
```

```
<210> 319
<211> 207
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 319
gggtcgactt tctgcaaggc gaggctacac cgtcgtcgtc gtggtatgcg atagccatcc 60
cgtcgggcta ctcgccatca ccgatcagct tcgccccgaa gccgccgtgg tgatttccgc 120
tgcgaccaaa ctgaacgggg ccaaaccggt attgcttacc ggcgacaacc gggccaccgc 180
cgatcggctc ggtgttcagg ttggcat              207
```

```
<210> 320
<211> 250
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 320
aatccgaaat cctgaccgat acttgaacct ggtctcgttc ggcaataact cgtcggcgtg 60
caggacgcgg cgcaaacgta cttcggcatc aacgcgtccg acctgaattg gcagcaagcg 120
gcgctgctgg ccggcatggt gcaatctaac agcacgctct tcccgtacac caaccccgac 180
ggcgcgctgg cccgggcgga acgtggtcct cgacaccatg atcgaaaaac cttcccgggg 240
aggcggatgc                            250
```

```
<210> 321
```

<211> 365
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (18)
<223> a, t, c or g

<400> 321
ttccgaattt cgggtccngg tcatatgacc ctcatggaag aagaagcggc cgccccgcgc 60
ccgtgcgacg gcgaatgaaa accctcaccc aggccgcatt gaacgccgac aagacggtgg 120
agcaggtcga agacgtcctg gacggtctgg gtaagaccat ggccgagctg aacagctcgc 180
tgtcacagct gaacagcacc gtggagcgct tggaggacgg tctggaccat ctcgaaggta 240
ccctgcacag cctggacgat ctcgcgaaac ggctcatcgt gttggtcgag ccggtggaag 300
ccatcgtcga tcggatcgac tacatcgtga gcctcggcga aacggtgatg tcaccgctgt 360
cggtc   365

<210> 322
<211> 413
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<400> 322
nctcgatctt ggggtacgtt cgatgaggct gctgaccaac aacccggcca agcgggtggg 60
actggatgga tacggattgc acatcatcga gcgcgtgccg ctgccggtgc gggccaacgc 120
ggaagaacat ccgttacctg atgaccaagc gtgacaaatt ggggcacgac ttggctgggt 180
tggacgattt tcacgaatcc gtgcatctgc ccggagaatt cggcggtgcc ttgtgaaggt 240
ggcgccgggg tgccggatct gccgtcgctg atcgtctgg tgtgcggctg gcgattgtcg 300
ccagcagctg gcacggaaag atctgcgacg cgctgttgga cggcgcccgc aagtggccgc 360
cgggtgtggc ctcgatgacc gactgtggtt cgggtgctcc gcgcgatcga tat   413

<210> 323
<211> 364
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (208)
<223> a, t, c or g

<400> 323
tcatcccgac caaaacgcga gctaggtcgg catccgggaa gcatcgcgac accgtggcgc 60
cgagcgcgct gccggcaggc cgattaggcg ggcatattat cccgccgcgg ctcccggctc 120
cgagtacggc gccccgaatg gcgtcaccgg ctggtaaccg ctcttgcgcg cctgggcggc 180
ggcctgccgg atcaggtggt agatgccnac aaagcctgcg tgatcggtca tcaccaacgg 240
tgacagcagc cggttgtgca ccaagcgcga acgccacccc ggtctccggg tctgtccaac 300
cgatcgaccg cccaagccca catgaacaaa ccccggcatc acgttgccga tcggcatacc 360
gtga   364

<210> 324
<211> 488
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (312)
<223> a, t, c or g

<220>
<221> modified_base
<222> (425)
<223> a, t, c or g

<220>
<221> modified_base
<222> (449)
<223> a, t, c or g

<400> 324
ttggcgggtt ggcccagcag cccgccggtg acggcgacga tgctgggctg gttgcggccc 60
tgcgccaccg cggcttgcat gctggttggc tgtcttggga cgatcccgaa atagtccacg 120
cggatctggt gattttgcgg gctacccgcg attaccccgc gcggctcgac gagtttttgg 180
cctggactac ccgcgtggcc aatctgctga actcgcggcc ggtggtggcc tggaatgtcg 240
agcgccgtta cctacgtgac ctgatggatc gggggggtgcc gaccgtgccc ggcgatgtgt 300
atgtgccggg anagccggtc cggttgccac gcaaaggcca tgtcttcgtc ggtccgacca 360
tcggtaccgg gacacggcgc tgtattgccc ggttcgctgc cgagttcgtc gcgcaactgc 420
acgcnggcgg gccagcggtg ctcgttcanc ccggaggttc cggtgacgat gatcgtgttg 480
gtctccct 488

<210> 325
<211> 396
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (380)
<223> a, t, c or g

<400> 325
gtaggagaga acaaagaccg tcgataggac acgtgttacg ccggtagctg tcattggtat 60
ggggtgccgc tgccgggggg catctactca cccgatcggt tgtgggaggc gttgctgcgg 120
ggcgacaatc tggtcaccga gatccccgcc gaccgctggg acatctacga gtactacgac 180
cccgaacccg gcgtgcccgg acgcaccgac tgcaaatggg gcgcgtacct cgataacgtc 240
ggcgactttg atcccgagtt cttcgggatc ggggagaaag aaacgatagc gatcgatccg 300
cagcaccgct tgttgctgga aacctcctgg gaagccatgg aacacggcgg gctaacaccg 360
aaccatatgc ctcccgacan gggttttcgt ggggtt 396

<210> 326
<211> 394
<212> DNA
<213> Mycobacterium tuberculosis

<400> 326
cgaactgagc ccatagaaag gcagcgacta attcgctggg caaataggaa gacccttgt 60
cctgccacgt atatttgtcg acctcgttgc gaaggaagcg gctgcgattg gtgccctttt 120
ccctggagaa tctctgcccg gagcaggaag tcttatgagt tgacaagcag gggcgccgcc 180
ttcgccggaa atcacattct tggtctcgtg aaatgagagc gctcccaggt cgccgatgct 240
gccgagcgcc cgcccacgat acgacgccat cgcgccttgg gccgcgtctt cgaccaccgc 300
caggttgtgg tgcgtggcga tcttcatgat cgcgtccatc tcgcaggcca cccggcatag 360
tgaacgggga ccatggcctc ggttcgcggg tgaa 394

<210> 327
<211> 140
<212> DNA
<213> Mycobacterium tuberculosis

<400> 327
cttagacgcc acctccgggc cgagctccac ggggtggata agtacggccg gatgtggccg 60
caatgggaag ttgttgcccg cttgactgtc cgggttaacg ccggattcca ccacatcccc 120
ttgcgaaagg ccgttgggtt   140

<210> 328
<211> 242
<212> DNA
<213> Mycobacterium tuberculosis

<400> 328
gatcgcgatc gtcgatgtgg ccatccggct tggcgtcgac ccgcgtaagg cagaccagat 60
ggttcgcggc acggtcaacc tgccacacgc actggtaaga ctgcccgcgt cgcggtattc 120
gcggttggtg aaaaggccga tgctgccgtt gccgcggggg ctgatgctgt cggatcgacg 180
atctgatcga gaggatcagg cggctggct ggaattcgat gccgcgatcg cgataccgga 240
tt   242

<210> 329
<211> 220
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (22)
<223> a, t, c or g

<400> 329
agcttacgcc gctttcgctt cngatttggg acgccgcatc gaaagcgcag ttggaagcgc 60
ggcgcccggc tggtcgagct gctcaagcag ccgcaatccc agcccatgcc cgttgaggag 120
caagtggttt cgatcttcct gggcaccggc ggtcacctgg actcggtgcc cgtcaaggat 180
gtcggcggtt cgaaaccgaa ttactggacc acatgcgggc   220

<210> 330
<211> 328
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (140)
<223> a, t, c or g

<220>
<221> modified_base
<222> (228)
<223> a, t, c or g

<400> 330
cgacgggacc tcgtcgcatc ttccatagcc cgccacacct tcagttgctc accggaatcc 60
aaccggtata aggtcggcga agcgctcggc attggtcatc gggatatgcc gctcgggacg 120
gtcagatgcc ctcgggtccn gccagcactc ctcaggcttc gtcggggtgg tcgcgaccgc 180
atgggccaca tcgcattcac caggtctgcg cgaatcacca gcacgtanac ggttcctttc 240
ctaagcaaca ccgaaatttc aggacccgaa tgctccggga aaacatgtca cggtaagtcc 300
ggtattccgg gtaccggttg agcattga   328

<210> 331
<211> 366
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (134)
<223> a, t, c or g

<220>
<221> modified_base
<222> (171)
<223> a, t, c or g

<220>
<221> modified_base
<222> (231)
<223> a, t, c or g

<400> 331
cggcatcggt ttgggctgtc accagcagtt ggtagttctt cactactgtt gttcgagcgt 60
cgagccgccg cgcgtgtcga ggtcgccgga cgcgtacccg ccaggccggt cagggtgccc 120
ttccagtcca cgcngctgtg gtcggctaac cgcttatctt caatcgagac natcgccagc 180
ttcatcgtgt tggcgatctt gtccgagggc acctcgaacc ggcgctgcga ntacagccac 240
gcgatcgtgt tgcccttcgc gtcgaccatc gtcgataccg caggcacttg cccctcgagc 300
agctgggccg atccgttggc aacgacctca gaggcacgat tggacatcag ccctagcccg 360
cctgcg 366

<210> 332
<211> 407
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (8)
<223> a, t, c or g

<400> 332
ccgtcgangc cgccgacttg gcttgaccga caccaacatg gcctgagggt gttcaacaag 60
accgtggccg acgggctgaa catcaccatg agcggcatga gccacgccac cgagttcatc 120
atgttgatcg ccgaaaacca ttggcgggta gcggaagaac ggtcgaggtg ctctacaccg 180
agtattcgaa gtcgaaaggc caaccgctgc tcaacggcgt caacatcatt ttcgacgggt 240
ttctgcgagg gaggatgcca cgatgaactg gatccaggtg ctgttgatcg cgtcgatcat 300
cgggttgctg ttctacctgt tgcggtcgcg ccgaagcgcg cggtccgtgc ctgggtcaag 360
gtgggctatg tcttgttcgt gctcccggca tctatgccgt gctgaga 407

<210> 333
<211> 473
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (8)
<223> a, t, c or g

<220>

<221> modified_base
<222> (187)
<223> a, t, c or g

<220>
<221> modified_base
<222> (244)
<223> a, t, c or g

<220>
<221> modified_base
<222> (282)
<223> a, t, c or g

<220>
<221> modified_base
<222> (292)
<223> a, t, c or g

<220>
<221> modified_base
<222> (312)
<223> a, t, c or g

<220>
<221> modified_base
<222> (410)
<223> a, t, c or g

<220>
<221> modified_base
<222> (434)
<223> a, t, c or g

<400> 333
ttacacgncc tgcttccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac 60
acaggaaaca gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc 120
aagctttttg agcgtcgcgc ggggcagctt cgccggcaat tctactagcg agaagtctgg 180
cccgatncgg atctgaccga agtcgctgcg gtgcagccca ccctcattgg cgatggcgcc 240
gacnatggcg cctggaccga tcttgtgccg cttgccgacg gngacgcggt angtggtcaa 300
gtccggtcta cncttgggcc tttgcggacg gtcccgacgc tggtcgcggt tgcgccgcgg 360
aaagcggcgg gtcgggtgcc atcaggaatg cctcaccgcc gcggcactgn acggccagtg 420
ccgcggcgat gtcngccatc gggacatcat gctcgcgttc atactcctcg acc   473

<210> 334
<211> 305
<212> DNA
<213> Mycobacterium tuberculosis

<400> 334
caggcatgca agctttgtca caccaagtgt ttcgaccagg cgctccatcc ggcgagtgga 60
tactcccagc aggtagcagg tcgccaccac gctggtcagt gcgcgttcag ctcgcttgcg 120
gcgctgcagc agccagtccg ggaaatagct gccctggcgc agcttgggga tcgcgacgtc 180
gatggttgcg gcacgggtgt cgaaatcacg gtggcggtag ccgttgcgct gattggaccg 240
ctcatcgctg cgttcgcggt agcccgcccc gcacagggcg tcggcttcag cccccatcaa 300
ggcgg   305

<210> 335
<211> 432
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (401)
<223> a, t, c or g

<400> 335
agcttagcca gttttttctac tcttgggccc acacccacag tgcttcgacg gtacggtcac 60
ccatgatggc catccagttg gcatcggtga gctgataaat gccagctggt ttcgccaacc 120
cggtagcgat cttggcgcgc tgcttgttgt cactgatacc tatcgagcaa gacagcccgg 180
tttgcgacaa gatgactttt cggatctctt cggcgacttc gatggggtcg tcgggagtcc 240
cgggcgccac cgcgaggtaa gcctcgtccc agccccatac ctcgaccggg tatcccaggt 300
cgcgcaataa cgccaccacc tcctcggacg ccgcgttgta ggcggctggg ttcgacggca 360
agaagtggcc tcagggcatc gtcggcgcgg tcccaacggc ntgccggcgc gcacaccgta 420
ggcgcggggc tc   432

<210> 336
<211> 429
<212> DNA
<213> Mycobacterium tuberculosis

<400> 336
ccggcggaac tcagacgtgc tggtggtgcg gcatggcacc gcgggcagca aagcgcactt 60
ctccggggac gacagcaagc gaccgctaga caagaggggt cgtgcgcagg cagaagcgtt 120
ggtaccacag ctgctggcgt tcggcgccac cgatgtttat gccgccgacc gggtgcgctg 180
ccaccagacg atggagccac tcgccgcgga actgaacgtg accatacaca acgagcccac 240
cctgaccgaa gagtcctacg ccaacaaccc caaacgcggc cgacaccgag tgctgcagat 300
cgtcgagcaa gtaggcacac ccgtgatctg cacgcagggc aaggtcattc ccgatctgat 360
cacgtggtgg tgcgagcgcg accgtgtgcc cccgacagtc ccgcaatcgc aaaggcagca 420
cgttggtgt   429

<210> 337
<211> 94
<212> DNA
<213> Mycobacterium tuberculosis

<400> 337
gtatggtcag ctgtccatcc ggcgctgtcg gccgagctgc cagatctcgt cagccgtaac 60
cgggttgcgg gatccacgcg tgcgggttgt ctac   94

<210> 338
<211> 351
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (336)
<223> a, t, c or g

<220>
<221> modified_base
<222> (342)
<223> a, t, c or g

<400> 338
ccgactttcc gcgggtaccc gctcaacttt gtgtcnacct caacgccatt gccggcacct 60
actacgtgca ctccaactac ttcatcctga cgccggaaca aattgacgca gcggttccgc 120
tgaccaatac ggtcggtccc acgatgaccc agtactacat cattcgcacg gagaacctgc 180
cgctgctaga gccactgcga tcggtgccga tcgtggggaa cccactggcg aacctggttc 240

```
aaccaaactt gaaggtgatt gttaacctgg gctacgcgac ccggcctatg gttattcgac 300
ctcgccgccc aatgttgcga ctccgttcgg ttgttccaga angtcagccc g           351
```

```
<210> 339
<211> 152
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 339
gcaccgatgt cggcgagcac ttcgtcaact tccagggggtg cccgcaccaa gtatttcgac 60
gagtatttcc gtcgggccgc cgccgccggt gcgcggcagg tggtcatcct ggcggcgggg 120
ctgggactcg cgcgcgtacc ggctgcctcg gc                                 152
```

```
<210> 340
<211> 263
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 340
tgcacccaac ttactgagca tgctaacgct ggtcgtgcgg gtcttgttcc cgcgtgtcgg 60
cagggcacac gctcggggcg tagctgggag aggccccggt caagcccgga gagcagtgct 120
cagtccgcca gcttgaccga ctttcgatga gaacgcgctt ctcgccgtat tgaactggcg 180
tgctgacggt cgctgagcag cgctcgccga gtgcggccgc tgattctttc atcgagccag 240
gacgcgcatt cgtgttcggc cgc                                           263
```

```
<210> 341
<211> 249
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (218)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (236)
<223> a, t, c or g
```

```
<400> 341
agcttacggc cggtcgacgc gacgagtggt tcatgacacc acaaaccgtc aacgcctact 60
acaacccggg gatgaacgaa atcgtcttcc cgcagcgatt ttacagccac cattttttcga 120
tccgcaggcc gacgaggccg ccaactacgg cgggatcggg gcgcgtgatc gggcacgatg 180
atcgggcacg gtttcgacga tagggcgcca aatacgangg cgacgcaatc tggtcnattg 240
gtggatcga                                                          249
```

```
<210> 342
<211> 269
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 342
atgtcgtcac gtcaccacaa tcgcgaggac ccaatcatgc cgcccagggc ggccaaccca 60
atggtggccg cgaagcggca gctcgatcgc agcgcggagg tgccggccgc cagttgattc 120
acgaacaggg tgaggtcata ggcgggcagg atagtgacga acgcaagacc tatatctgcc 180
gtcggagtaa gaatcgagta gccggtcgac caacggaagc gaaagtgtcc gcgatgttga 240
tgagcgtcgc cggttgtggc ggcggtggc                                    269
```

<210> 343
<211> 336
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<400> 343
agcttcacca gcgtgccgat gctgttcgcn acacctccct actatgcgca attcgccgac 60
acgggtggca tcaacacggg cgataaggtg gacatcgctg gggtgaacgt cgggctggtg 120
cgctcgctgg caatccgcgg caaccgcgtg ttgatcggat tctcgttgcc cggcaagaca 180
atcgggatgc aaagccgggc agcaattcgc accgacacca ttcttggccg taagaacctg 240
gaaatcgaac cccgcggttc ggagccgttg aaacccaacg gtttcctgcc gttggcgcag 300
aacactacgc cataccaaat ctatgacgcg ttcgtc 336

<210> 344
<211> 417
<212> DNA
<213> Mycobacterium tuberculosis

<400> 344
ctgccgcggt ggcggtcagc gcctggcaag tcaccgcacc gccgtccggt tcatcggcag 60
gctcccccga aaagggccct ggcaacagaa ggtgatcaat gagctcccgc agaccttcgc 120
cgatctggga ccgacatacg tgaagttcgg ccagatcatc gcgtccagcc cgggagcatt 180
cggtgagtcg ctgtcgcggg gaattccgcg gcctgctcga ccgggtgccg cccgcaaaaa 240
ccgacgaggt gcacaagctc ttcgtcgagg aactcggcga cgagccggcc cggctgttcg 300
cctccttcga ggaagaaccg ttcgcgtctg cgtccatcgc ccaagtgcac tacgcgacct 360
gcgcagcggc gaagaagtgt ggtcaagatc cacggccggg catccgccgc cgcgttt 417

<210> 345
<211> 405
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<220>
<221> modified_base
<222> (360)
<223> a, t, c or g

<400> 345
gatcgtgccg gccccccggc ggcagtagca gatcagctcg tcgaaatcgc ggcaaccagt 60
ccagtcgatt tccatacggg cgccgtcaat caactctgcg aacatcgcga tcggcaccgg 120
aaaccggcga ccgcgtcag ccagcgcaac cagcaccggg atcggatgaa tcatcaatat 180
tatcaagtga tttcctgatg gcatcgagct cggtgatctt ggtctcgggg gccagctcgc 240
cgtcggcgac gtcgtcgatc cggcggccga gcgcatagac cgcaaatagt gccgctcgct 300
tttcgcgcgg caagagtcgg atgccgtaat atangtttct ggcggccgtg cgcgtgatcn 360
actcggtgat tcgatacgcc tgttcatctc ggtcatgccg tcctc 405

<210> 346
<211> 414
<212> DNA

<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (340)
<223> a, t, c or g

<220>
<221> modified_base
<222> (373)
<223> a, t, c or g

<400> 346
ggtggcgcaa tgaccgaaac caccccagcc ccgcaaaccc cggcggcccc ggccgggccc 60
gcacaatcgt tcgtgttgga gcggcccatc cagaccgttg ggcgccgtaa ggaggccgtg 120
gtacgagtgc ggctggtgcc cggcaccggc aagttcgacc tcaacggccg cagcttggag 180
gactacttcc caaacaaggt gcaccagcag ttgatcaagg caccctggt caccgtggat 240
cgggtggaaa gtttcgacat ctttgcccac ctgggcggcg gcggcccgtc gggtcatggc 300
cggcgcgctg cgcctgggta tcgcccgggc attgattctn gtatcgccgg atgaccggcc 360
cgcgctgaat aangccggct tcttgaccgt gatccacgcg ccaccgaacg caaa 414

<210> 347
<211> 331
<212> DNA
<213> Mycobacterium tuberculosis

<400> 347
cacaatagat tactcaagct tcgaaccagc ggccttatca cgtatccccg ctgagacctt 60
gacccttagg gccgaagtga cttcgctgct gctatgccga cacccgattt ccagacgctg 120
ctgttacacg acggccgggc cggtggccac catcacgctc aaccgcccgg aacagctcaa 180
caccatcgtc ccgcccatgc ccgacgagat cgaggccgct atcgggttgg ccgagcgcga 240
ccaggacatc aaggtcatcg tgctgcgcgg tgccggccgc gccttctccg gcggttacaa 300
cttcggcggc gggttccaac attgggggca t 331

<210> 348
<211> 386
<212> DNA
<213> Mycobacterium tuberculosis

<400> 348
tcaggacgct tatggttggc agatggtcgc cctggcgtcg aatacgcgcg agcgcatgag 60
ctcaccggtt cggaacaacg tatcgaagaa cgtcgcactg ctggcagatg gtatctccga 120
tgtggttgta atttgtatcc caactctaac tgtgctatcg gatcagcgtg aatatcgaga 180
tattgcgaat gcgatgacag gccgccattc ggtttattcg cttacgcttc ccgggttcga 240
ttcgtctgat gcactgccgc aaaacgcgga tatgattgtt gaaaccgtat ctaacgcaat 300
tattgatgtg gtaggcggca gctgccgttt tgtgctgtcg ggctattcat cgggtggggg 360
tgtttggcta tgccctctgc tcccat 386

<210> 349
<211> 187
<212> DNA
<213> Mycobacterium tuberculosis

<400> 349
cgcagctgtc gccgatctgg tccggaatac ctagctccag gttctgagtg gagatgagtg 60
cggccatcga agtgttgtca atgtactcca ggatgtcagg tgccaggccg ctggcgagga 120
tcttgggcac cgccgccatg acttggtcga agtcggcgaa cggggcgagc acgctggcgt 180
cgtggtc 187

<210> 350
<211> 241
<212> DNA
<213> Mycobacterium tuberculosis

<400> 350
gtagttcgtt catccaaaca cagtgcggta ccggctcaag cggatcaccg acttcaccgg 60
gcgcgatccc acccagccac gcgatgccta tgtccttcgg gtggcggcca ccgtgggtca 120
actcaactat ccgacgccgc actgaagcat cgacagcaat gccgtgtcat agattccctc 180
gccggtcaga gggggtccag caggggcccc ggaaaagata ccaggggcgc cgtcggaccg 240
a 241

<210> 351
<211> 335
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (296)
<223> a, t, c or g

<400> 351
tccgctcgct tctccgagag gttgagtgcc aacgctctgc cgatgcccga agccggcccc 60
ggtgatgacg gcgaccttgc cttcgaatga gctcatttga ctactccccg tggttgtccc 120
tgcgattggt ggaggtggcc gcgcagcctt gccccgaggt cggcgatcgc gtctcgggct 180
tcggggagca gactgacctg cagatggaag tcgtgccaca tgcccgcgaa ccggcgatgc 240
tcgatgcttg ttttcgaagc ggcgcaggcg gtttcgatct tgtccgcgtc aacacngatc 300
ggatcgtcgc ccgcggtctg catgacgaat gggcg 335

<210> 352
<211> 441
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (425)
<223> a, t, c or g

<400> 352
atgggaggcc accgattacc atcttgcaca caccgattcc gggctattga tgtccacgtt 60
cggtccgcga accgcgctgt ggctgctgct ggccaaaggc ggaggcgata ccgaagtcag 120
tgcccaagct tgggttccac gctcgcgcag ccacgccgtc acctttccac gagacctcac 180
ctgccgatcc gaaatggaat cggccgtgac ggaattggcg cagcgaacac tcaacgaggt 240
ggtggcttcg tcgcgaaccg tcacccgagt cgcggtcacc gtgcgcacgg cgacgttcta 300
cacccgcacc aagatccgaa agctgcaagc tcccagcacc gatcccgacg tcatcaccgc 360
tgccgcccgg cacgttcttg aacctattcg agctggaatc ggccgtccgg ttgctgggaa 420
ttgcngttaa gaactgggcc t 441

<210> 353
<211> 332
<212> DNA
<213> Mycobacterium tuberculosis

<400> 353
gctttgcgcg cttctccgag aggttggagt gccaacgctc tgccgatgcc cgagccggcc 60
ccggtgatga cggcgacctt gccttcgaat gagctcattt gactactccc cgtggttgtc 120
cctgcgattg gtggaggtgg ccgcgcagcc ttgccccgag gtcggcgatc gcgtcgcggg 180
cttcggggag caaactgacc tgcagatgga agtcgtgcca catgcccgcg aaccggcgat 240

```
gctcgatgct tgttttcgaa gcggcgcagg cggttcgatc ttgtccgcgt caacgcagat 300
cggatcgtcg cccgcgggtc tgcatgaaga at                                332
```

```
<210> 354
<211> 334
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<400> 354
ctcacgcagc cacgccgtca cctttccacg aagacctcac ctgccgatcc gaaatggaat 60
cggccgtgac ggaaattggc gcagcgaaac actcaacgag gtggtggctt cgtcgcgaac 120
cgtcacccga gtcgcggtca ccgtgcgcac ggcgacgttc tacacccgca ccaacatccg 180
aaagctgcaa gctcccagca ccgatcccga cgtcatcacc gctgccgccc ggcacgttct 240
tgacctattc gagctggatc ggcccgtccg gttgctggga gtgcggttag aaactggcct 300
agaaaccggc gggcacaccg cacctgggcg gggn                              334
```

```
<210> 355
<211> 341
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (159)
<223> a, t, c or g

<220>
<221> modified_base
<222> (190)
<223> a, t, c or g

<220>
<221> modified_base
<222> (335)
<223> a, t, c or g

<400> 355
tgcttccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac acaggaaaca 60
gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc aagcttgatg 120
ccgccgaaac cgagcgtgag cacgccgcca gccaccacnc gcgggtcggg cgccgggccc 180
gggtcgccan gctgctccgc tcggtgatgg cacgccaccg cgacaccacc cggctgcgct 240
acgtcgagcc ataccgggcg gagctacatc ggctcggccg cccagtgttc gggccctctt 300
tcgaagtcga agtcgatacc gattgcgcat ccgcngccgc a                      341
```

```
<210> 356
<211> 259
<212> DNA
<213> Mycobacterium tuberculosis

<400> 356
caggcatgca agcttcacgt ccgtacggct cgggtacgct tcggtcgcag tgtgcgagtg 60
atagatgacg accgggacct cgtctgcatc ttccatagcc cgccacacct tcagttgctc 120
accggaatcc aaccggtaga aggtcggcga gcgctcggca ttggtcatcg ggatatgccg 180
ctcgggacgg tcagaaccct cgggtccggc cagcactccg caggcttcgt cggggtggtc 240
gcgacgcgca tgggccacc                                               259
```

<210> 357
<211> 349
<212> DNA
<213> Mycobacterium tuberculosis

<400> 357
gcttgtctat cgtcccggcc aggtccggcc agtcaaggtc gaaggccagt ccggtctcct 60
ctccgactac ggccaagaac tgggcgacgg tgtcagtgca gaccagcgga aactggtggc 120
gccctaggcg agcgaccgcc tcacaaacgg cggtgaccgc gttctggtcg tgcaccatcg 180
agccgtgccc agcccggccg cgtgccgtca gccgcatcca ctggatgccc ttctcggcgg 240
tttcaatcag gtacaggcga cgttcgccac catcgtgccg gggcacggtt agcgagaaac 300
cgccgacttc acgattgcct cggtgatgcc gtcgaaacag atcgggcct 349

<210> 358
<211> 325
<212> DNA
<213> Mycobacterium tuberculosis

<400> 358
gcgcgccatg ttgaggttgt ccgacggtga cgacggtgaa ccacaactgt ttgacctgtc 60
cgcacacacc gtgtggatcg gcgagcggac ccgacaaatc gatggcgcgc acatcgcgtt 120
tgcccaggtg attgctaatc cggtcggggt caagttgggc cccaacatga ccccggaact 180
ggccgtggag tacgtcgagc ggctcgaccc gcacaataag ccgggccggc tgacttggtg 240
agcaggatgg gcaaccacaa ggtccgcgat ctgttgccac cgatcgtgga gaacgtccat 300
gccaccgggc atcaggtcat ctggc 325

<210> 359
<211> 191
<212> DNA
<213> Mycobacterium tuberculosis

<400> 359
ttgccttcca tgccgagcaa ggtcgactca gcgatgacga attgttcttc ttcgcgggtg 60
ttgctgctgg ttgcgggcta tgagagcact gctcatatga ttagcacatt gtttctgacg 120
ctggccgact atccagatca gctgacactc cttgcgcagc aaccagacct gatcccgccg 180
gcgatcgagg a 191

<210> 360
<211> 74
<212> DNA
<213> Mycobacterium tuberculosis

<400> 360
cgacgctggg cccaactgcg accaccaggt cctggtatgg caggacatgg ccgggttcag 60
cggcgccaat accg 74

<210> 361
<211> 312
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<220>

<221> modified_base
<222> (45)
<223> a, t, c or g

<220>
<221> modified_base
<222> (258)
<223> a, t, c or g

<220>
<221> modified_base
<222> (294)
<223> a, t, c or g

<400> 361
taacgactcg ggtccagcga ccgcgccaac acnaacggcc ggacnacgtg ggccagggtc 60
gcggcctccc ctacaaacag gatccgttgc ctgcgaacga caggctccgg tgcggcgttg 120
ggcgccgtgc tcgtcccagc gtccggtccc gggtcgccgg cgacgcttgt ttcctccata 180
ctcgcccccct aatctcgagg cagcccgtac ccgcaggcaa cctcccaaaa atgcaatccc 240
ccaaaatgca atgcgtcnag ctatttctca caccgaccgc tagttgcgga tcanaaatcc 300
gttgggcgcg ga   312

<210> 362
<211> 335
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<220>
<221> modified_base
<222> (221)
<223> a, t, c or g

<220>
<221> modified_base
<222> (318)
<223> a, t, c or g

<220>
<221> modified_base
<222> (328)
<223> a, t, c or g

<400> 362
cntggcggtg ggtgcggtgt cgaacacgac cacacttctt tgcggttcgg tgatctcgac 60
accggccgcg agccgaccac catgcgcgcg tagatcggcg atcagcgcgt cggctatcgc 120
ctgggtgccg cccaccggaa tcggccagcc gaccgaatgg gccagcgttg ccatcatcag 180
tccggcgccg gccgacacca gtgacggcaa cggtgaaatc ncgtgggcgg caacgccggt 240
gaacaacgcg cgggcatcct cgcccgccag cgaccgccag gcaggggtgc cctgggccag 300
catccgcagc ccgagacnca ggaccgancc cagtg   335

<210> 363
<211> 386
<212> DNA
<213> Mycobacterium tuberculosis

<220>

<221> modified_base
<222> (8)
<223> a, t, c or g

<220>
<221> modified_base
<222> (125)
<223> a, t, c or g

<220>
<221> modified_base
<222> (164)
<223> a, t, c or g

<220>
<221> modified_base
<222> (199)
<223> a, t, c or g

<220>
<221> modified_base
<222> (220)
<223> a, t, c or g

<220>
<221> modified_base
<222> (239)
<223> a, t, c or g

<220>
<221> modified_base
<222> (284)
<223> a, t, c or g

<220>
<221> modified_base
<222> (358)
<223> a, t, c or g

<400> 363
gcttttcnga tcgcagcgag tcgtacccgc gccggtcacc ttcgtggata tcgccggcct 60
ggtcaagggg gcgtccgagg gagccgggct gggtaacaag ttcctggctc atatccgcga 120
atgcnacgcc atttgtcagg tggtgcgggt gttcgtcaac aacnacttga ctcatgtcac 180
cggacgggtc gatccccant ccgacattga ggtcgtcgan accgagctga tcctggcana 240
tctgcaaacc ctggagcggg ccacgggccg gctggagaag gaancgcgca ccaacaaggc 300
gcgcaagccg gtctacgacg cggcactgcg tgcccagcag gtgctcgacg ccggcaanac 360
gctgttcgcc gcgggggtgg atgccg 386

<210> 364
<211> 386
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (14)
<223> a, t, c or g

<220>
<221> modified_base
<222> (166)
<223> a, t, c or g

<400> 364
gtcgtacgcc attngtcggt gtgcgcatac cagtacgacg cgccgggcac ctgacgcggc 60
ggccgcgacc agtcggtggc catcgccatc gtctgccacc cggtcaacgg acgcaccttc 120
tcctggccga cgtagtgcgc ccacccgccg ccgttgcgtc ccatcnatcc ggtcaacatg 180
agcagcgcca acaccgagcg gtacatgaca tcgctgtgga accagtgaca gattccgccg 240
cccatgatga tcatcgaccg tcctccggat tcggtcgcgt tgcgggcgaa attccttggc 300
aaaccggatt gcctgcgcgg ccggcacacc ggtgatcgac tcctgccagg ccggggtgtt 360
ctgctgggtt cggtcgtggt accggt 386

<210> 365
<211> 335
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (92)
<223> a, t, c or g

<220>
<221> modified_base
<222> (102)
<223> a, t, c or g

<220>
<221> modified_base
<222> (159)
<223> a, t, c or g

<220>
<221> modified_base
<222> (208)
<223> a, t, c or g

<220>
<221> modified_base
<222> (322)
<223> a, t, c or g

<400> 365
gcgaggcggt atcgcttccc gtcgtaccgg cgaccgccag ccgagaagct cgttttccca 60
gtgttgctgg ggattctcac gctgctgctg antgcgtgcc anaccgcttc cgcttcgggt 120
tacaacgagc cgcggggcta cgatcgtgcg acgctgaant tggtgttctc catggacttg 180
gggatgtgcc tgaaccggtt cacctacnac tccaagctgg cgccgtctcg tccgcaggtc 240
gttgcttgcg atagccggga ggcccggatc cgcaatgacg gattccatgc caacgctccg 300
agttgcatgc ggatcgaata cnaattgatc accca 335

<210> 366
<211> 396
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (171)
<223> a, t, c or g

<220>
<221> modified_base
<222> (350)

<223> a, t, c or g

<400> 366
tgggtcttgc cggcgagccc agcgaagtcg ctagcgtggc cgtgtttctt ggcttcggat 60
ctatcctcgt tacatgaccg gcaccgtgtt ggacgtgact ggcggccggt tcatatgaca 120
ccgagatcat tgccacggta cggcaattcg tcaagaagga aatctttccc natgcaccgg 180
ccctcgaacg tggcaacagc tacccgcaag aaatcgtcga tcggctgggt gttattggct 240
tgctcggtcg ccggctgcaa gggtatcgac accaccgagt tcattctcgg gcgtgccggc 300
gcattcgagc tggcggtgcg cgctgcccag caccgtcata agtacttgan gatggtcaaa 360
cgtcggacga accgccacca cgtcgctgcc gaacgg 396

<210> 367
<211> 262
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (19)
<223> a, t, c or g

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (84)
<223> a, t, c or g

<400> 367
tagatgccca agcttgccnt tanagacctc gtcgaccaag cacggacgcg accgtcgaag 60
gtggcgaatc cgggcttggc gtcnacccgc gtaaggcaga ccagatggtt cgcggcacgg 120
tcaacctgcc acacggcact ggtaagactg cccgcgtcgc ggtattcgcg gttggtgaaa 180
aggccgatgc tgccgttgcc gcgggggcgg atgttgtcgg gagtgacgat ctgatcgaga 240
ggattcaggg cggctggctg ga 262

<210> 368
<211> 303
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (291)
<223> a, t, c or g

<400> 368
tctccacggc gtggatcaag gtaccggccg ggatgttgcg caatggcagg ttgttgcccg 60
gcttgatgtc tgcgttagcg ccggattcca ccacatcccc ttgcgaaaag tccgttgggt 120
gcaatgatgt agcgcttctc cccatcgaga tagtggagca acgcaatccg tgcggtacgg 180
ttcgggtcgt actcgatgtg cgcgaccttg gcgttgacac catctttgtc attgcggcga 240
aagtcgatca tccggtaagc gcgcttatga ccgccgcctt tgtgccgggt nggtaatccg 300
gcc 303

<210> 369
<211> 367
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (321)
<223> a, t, c or g

<220>
<221> modified_base
<222> (332)
<223> a, t, c or g

<220>
<221> modified_base
<222> (343)
<223> a, t, c or g

<400> 369
gcccggttcg atcgggcatg tccgcagtcg tcgttaccgg aggcggtcgt ggccgcgcta 60
atcggcgtcg cgccgacaa gatgtgggat atccgcaatc ggggcgtcat ccctgcgggc 120
gcgctccccc gcgtccgagc cttcgtcgac gcaatcgagg caagtcacga cgcggatgag 180
gggcagcagt gaattacagc gaggtcgagc tgttgagtcg cgctcatcaa ctgttcgccg 240
gaaacagtcg cgaccgggg ttggatgcgg gcaccacacc ctacggggga tctgctgtct 300
cgggctgccg acctgaatgt nggtgcgggc ancgccggta tcnactcccg tggaacacag 360
ccggggc   367

<210> 370
<211> 366
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (37)
<223> a, t, c or g

<220>
<221> modified_base
<222> (88)
<223> a, t, c or g

<400> 370
ctcggcgtgg atatcggtgt agccggcgcc ggtgaangtc ggctccttac gtccactcga 60
caacagctca tagcgatcca accagtangc aaccgccttc agcagtacaa ccgcgccggc 120
gaacactgcg agttgaacgc gagctgcctg ggtcagcatg cctctgccgg ttgtcagccg 180
aaggccgccg aacaggtaat gcgtcaacag gctcgctaga aacgccagaa ccacggccac 240
gaacagccag ttcagcaccg accggtagaa cggcagatcg aagacgaaaa aacccaatgt 300
catagccgaa ttcggggtcc acgatgccaa aggtgccccc gtgtacaaca actgaacctt 360
caccca   366

<210> 371
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<400> 371
tccggctcgt atgttgtgtg gaattgtgag cggataacaa tttcacacag gaaacagcta 60
tgaccatgat tacgccaagc tatttaggtg acactataga atactcaagc ttcacgtccg 120
tacggctcgg gtacgcttcg gtcgcagtgt gcgagtgata gatgacgacc gggacctcgt 180
cggcatcttc catagcccgc cacaccttca gttgctcacc ggaatccaac cggtagaagg 240
tcggcgagcg ctcggcattg gtcatcggga tatgccgctc gggacggtca gagccctcgg 300
gtccggccag cactccgcag gcttcgtcgg ggtggtcgcg acgcgcatgg gccaccatcg 360

```
cattcaccag gtctgcgcga atcaccagca cgtagacggt tcctttccta agcaacaccg 420
aagtttcagg accgaatgct ccgggaaaca tgtca                           455
```

<210> 372
<211> 196
<212> DNA
<213> Mycobacterium tuberculosis

<400> 372
```
caggcatgca agcttgatgc cgccgaaacc gagcgtgagc acgccgccag ccaccacgcc 60
cgggtcgggc gccgggcccg ggccgccagg ctgctccgct cggtgatggc acgccaccgc 120
gacaccaccc ggctgcgcta cgtcgagcca taccgggcgg agctccatcc gctcggccgc 180
cagtgtccgg gccctc                                               196
```

<210> 373
<211> 443
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (36)
<223> a, t, c or g

<220>
<221> modified_base
<222> (303)
<223> a, t, c or g

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<400> 373
```
cctgcatccg gctcgtatgt tgtgtggaat tgtgancgga taacaatttc acacaggaaa 60
cagctatgac catgattacg ccaagctatt taggtgacac tatagaatac tcaagcttcc 120
aatccccctg ccctgatacg cgtcggcaac cgtgaacgcg atctcggcga ccgtcggatc 180
ggtttcatcc cgcacaaaac gcgcgtcggc tacggggtcg cttccgtcgg tcaccaccca 240
gacgaagtgg tcgacgtagt cgacttccga caggtagtgc atcaacgccg gactgggaac 300
acnagccgac atgaaccgtc gatacagcgt ctcnccggag aactggatgt gtccgtgcac 360
ggtccgctcg cggtcaccgg gcagcacggg gcgtaacatc agttgagtcc cgtcggcaag 420
ccgtaccgga atcggggaga cga                                       443
```

<210> 374
<211> 445
<212> DNA
<213> Mycobacterium tuberculosis

<400> 374
```
caagatgatc gccggtgcca ccccgatccg tgcctcggtc agcgcgaacg tgctttccgg 60
tccggcgacc accatgtcgc acgcaccgac caggccgaac ccgcggcacc gcacatgccc 120
gttgatggcg ccgaccaccg gcagcggcga ctcgacgatg gcgcgcaaca gcgccgtcat 180
ttcccgcgcc cgcgccaccg ccatccggta cggatcacca ccaccaccgc cggcctcgct 240
gaggtccgcg ccggcgcaga acgttccgcc ggtatgcccc agcacgacca gccgcaccgc 300
cggatctgct tcggccgcac tcagcccttg atgtagttgg ctgaccagcg tgctcgacag 360
cgcgttgcgg ttgtgcggag agttcagtgt cagcctggcg aagggccgc cgcaggcggc 420
cgggccagcg tagtcgacgg ggctg                                     445
```

```
<210> 375
<211> 308
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<220>
<221> modified_base
<222> (302)
<223> a, t, c or g

<400> 375
ctcaagcttc gatcgacagt actcccgcct tgggtctggt cttcgagctg gtcggtcatg 60
gtcggacctg ctggtagtgg ggatctaacg caacatggtc gggattcatc atggtgtacc 120
cgtgataccc attcgcagct gccggtgaaa ccccgcgatg ccgggatttc cagccgcact 180
aggatgtcta gccggccagc cgctgccgcc ggacttcggg atgttcggta taccaccgat 240
cggcaatctt gcntatccgc cgatgctcga acgctagcca ccccaaacca accactgtga 300
cnacaatc                                                       308


<210> 376
<211> 239
<212> DNA
<213> Mycobacterium tuberculosis

<400> 376
tgaatttccc gatcccacaa tctcggttca gatacaggtc gccataccccc ttacttcggc 60
aacgctgggc ggattggccc tgccgctgca gcagaccatc gacgccatcg aattgccggc 120
aatctcgttc agccaatcca tacccatcga cattccgccg atcgacatcc cggcctccac 180
tatcaacgga atttcgatgt cggaggtcgt gccgatcgat gtgtccgtcg acattccgg 239


<210> 377
<211> 431
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (346)
<223> a, t, c or g

<220>
<221> modified_base
<222> (417)
<223> a, t, c or g

<400> 377
tactcaagct tgaacgctgc gagcgagccc atgtagagcg tttggtacca aaccgatcgg 60
tgggccaact tgccatgggc tcacagcggc tatcgcgagc gtgtagccga tcatcggcca 120
ggcgacggtg gcctgagcgg caggggttgc cttatccatc ctcttgcggc atggttgccg 180
cagggagtgc cggtaagtct ggtcggcaac ctggcccgct gcgggttggg ttcggattcc 240
ctcggctagt aaggtgctcg cctggtgtta caacgaatcg ctagacagct cttatcggga 300
gtggccgtcg cgatcgttgc gctgccgctg gcgatcgcgt tcggcnttac cgccaccgga 360
acgtcccaag gtgcgctcat cgggctctac ggcgccatct tcgccggatt cttcccngcc 420
gtgttcggtg g                                                   431


<210> 378
```

<211> 334
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (281)
<223> a, t, c or g

<220>
<221> modified_base
<222> (284)
<223> a, t, c or g

<220>
<221> modified_base
<222> (314)
<223> a, t, c or g

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<400> 378
gcggtgtctg aacttcgccc gttccctcca gcgcattgag cttcagcccg accggcaggt 60
agggagtcgg catgcggtcc ttcgccccga ccccgctggc taaatagcca cccccgagcg 120
cggtcacggt ctttgcaccg ggacgacggc ataccggcag cgcgaacatc gccgcgggct 180
gcagcgtgaa cgtcgaatac gagtcgaaca gtgtcggcgc gtaaaaaccc gagccggcgg 240
tcgcttcggt aatcaacggc tcctgcgcaa ccagctgcaa ntcnccggtg ccaccggcgt 300
tgacaatctt gatntcggcg acctcgcgca ccan 334

<210> 379
<211> 302
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (40)
<223> a, t, c or g

<220>
<221> modified_base
<222> (224)
<223> a, t, c or g

<220>
<221> modified_base
<222> (268)
<223> a, t, c or g

<220>
<221> modified_base
<222> (278)
<223> a, t, c or g

<400> 379
tactcagctt cggctcaggt ggtgctgctg gtaaagttcn ctgaacggtg caggtttcga 60
caatgtggtg ccggttcggc gggtactgcc atcgagacac tggcgcaggc tatcgcaccc 120
gttatcggct acaaacaaat cgcggtatgc gttcttgagc atgagtcggc gaccgtcgtc 180
atggtcgaca cccacgacgg aaagacgcag atcgccgtca agcntgtgtg ccgcggatta 240

```
tcaggactga cctcctggct gaccggcntg tttggtcncg atgcctggcg cccggccggc 300
gt                                                                 302
```

```
<210> 380
<211> 240
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<400> 380
catcacctgg ttcatgaaac tggaagcagc gcagcgcttc cttttcggcc gcaacatgag 60
ccagcctctc gtcggcggtc gggtgcaggt gctcgggcag ctcggccgcg acagccgcct 120
gaccctgaaa ccagcttcca tatcccgcga cgaacgacgc cagtccgcta cgtaaccct 180
ccgcgactgt ccatggacaa cancgcgttc tccaccgacc gggcccgggt gtggggtgtt 240
```

```
<210> 381
<211> 362
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (58)
<223> a, t, c or g

<220>
<221> modified_base
<222> (84)
<223> a, t, c or g

<220>
<221> modified_base
<222> (333)
<223> a, t, c or g

<400> 381
ctcaagcttc ccggcggcca gtaccgaaag cgcgaacagc tcgcggcagc ccacaacntg 60
ctgcgtcgga ttgccggcgg cganatcaat tccaggcagc tcccggacaa tgcggctctg 120
ctggcccgca acgaaggact cgaggtcacc ccggtgcccg gggtcgtggt gcacctgccg 180
atcgcacagg ttggcccaca accggccgct tgatgcccgg tcggcaagcc cggcagttgc 240
caaacccagc gtgatcaggc tcggctcgcg agttcggcga agaagtggct cgcctgatca 300
cctaccatcg gccaggatct gcgtgtcatc acnacgctcg ccaaggaggt tgttgtggtg 360
ct                                                                 362
```

```
<210> 382
<211> 411
<212> DNA
<213> Mycobacterium tuberculosis

<400> 382
gccacgtttc gcgccgcccg gcatacggcg gcgtaccgat ctccgcgtca tacacccgcg 60
ggtaatcgcc gacggtgccg gttcgcgagc cgaaggtgac gacgctgatt gaatcgagtt 120
ccaggtccag cgggtggcg agcaacggcg cgagctcaac gacgtcaatc acgttgtcgc 180
tttctacggt caccgacccg gtgaccgtag tcgcccggtg cgctcggccg agaagttgca 240
ccgccaccac cgcgacaccg tcttgcacgc ggacgccacc cccggatcgg ttgttggcca 300
aggtaattgg gtcattccat ttgacgggac gccgaccccg cagccccagt accgcccacg 360
```

```
accacgccgg ctgaccccac cactgtacga acaccaaggc gacgccgacc a          411
```

```
<210> 383
<211> 331
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<220>
<221> modified_base
<222> (209)
<223> a, t, c or g

<220>
<221> modified_base
<222> (292)
<223> a, t, c or g

<400> 383
ctcaagcttg atgccgccta aaccgaagcg tgagcacgcc gccacccacc acgcgcgggt 60
cgggcgccgg gcccgggccg ccaggctgct ccgctcggtg atggcacgcc accgcgacac 120
cacccggctg cgctacgtca agccataccg ggcggagcta catcggctcg gccgcccagt 180
gttcgggccc tctttcgagg tcnaggtcna taccgatttg cgcatccgca gccgcaccct 240
ggacgacaga accgtgccct acgagtgctt gtcgggcggg gccaaagaac ancttggcat 300
cctggcgcga ttggccggcg cggtcctggt c                              331
```

```
<210> 384
<211> 254
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (111)
<223> a, t, c or g

<220>
<221> modified_base
<222> (114)
<223> a, t, c or g

<220>
<221> modified_base
<222> (218)
<223> a, t, c or g

<400> 384
ctcgggtacg cttcggtcgc agtgtgcgag tgatagatga cgaccgggac ctcgtcggca 60
tcttccatag cccgccacac cttcagttgc tcaccggaat ccaaccggta naangtcggc 120
gagcgctcgg cattggtcat cgggatatgc cgctcgggac ggtcagagcc ctcgggtccg 180
gccagcactc cgcaggcttc gtcggggtgg tcgcgacncg catgggccac catcgcattc 240
accaggtctg cgcg                                                 254
```

```
<210> 385
<211> 346
<212> DNA
```

<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (256)
<223> a, t, c or g

<220>
<221> modified_base
<222> (258)
<223> a, t, c or g

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

<220>
<221> modified_base
<222> (275)
<223> a, t, c or g

<220>
<221> modified_base
<222> (297)
<223> a, t, c or g

<400> 385
ctcaagcttc aattcctcca cgacgcgttc ccaaatgaat ttcccgatcc cacaatctcg 60
gttcagatac aggtcgccat acccttact tcggcaacgc tgggcggatt ggccctgccg 120
ctgcagcaaa ccatcgacgc catcgaattg ccggcaatct cgttcagcca atccataccc 180
atcgacattc cgccgatcga catcccggcc tccactatca acggaatttc gatgtcggag 240
gtcgtgccga tcgatntntc cgtcnacatt ccggnggtca ccatcaccgg caccagnatc 300
gacccgattc cgctgaactt cgacgttctc agcagcgccg gaacca 346

<210> 386
<211> 287
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (53)
<223> a, t, c or g

<220>
<221> modified_base
<222> (269)
<223> a, t, c or g

<400> 386
ttaacccccg tggcctctac gccgcctncg ggtcgaacat gcatcccgag canatgctcg 60
agcgcgcacc ccactcgccg atggccggaa ccggctggtt acccgggtgg cggctgacgt 120
tcggcggcga ggacatcggc tgggaagggg cgcttgccac cgtcgtcgaa gacccagatt 180
cgaaggtgtt cgtcgtgctc tacgacatga ccccggcgga cgagaagaac cttgaccggt 240
gggaaggctc cgagttcggc atccaccana agatccgatg ccgcgtt 287

<210> 387
<211> 370
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (233)
<223> a, t, c or g

<400> 387
ctcaagcttg attttgatca tcatggatga tcatcacccg aagtgtggta gccgcagtgg 60
ttatcgtggg taccgtcgtg ctttccatgg gcgcctcttt cgggctttcc gtattggtct 120
ggcaggacat tctgggtatc gagttgtact ggatggtgtt ggcgatgtcg gtgatcctgc 180
tcctggcggt gggatccgac tacaatctgc tgctgatttc ccggttgaaa aangaaattg 240
gggccggatt gaacaccgga attatccgtg ccatggctgg taccggggga gtggtgacgg 300
ctgccggcat ggtgttcgcc gttaccatgt cgttgtttgt gttcagcgat ttgcgaatta 360
ttggtcagat 370

<210> 388
<211> 330
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (3)
<223> a, t, c or g

<220>
<221> modified_base
<222> (19)
<223> a, t, c or g

<220>
<221> modified_base
<222> (159)
<223> a, t, c or g

<220>
<221> modified_base
<222> (161)
<223> a, t, c or g

<220>
<221> modified_base
<222> (305)
<223> a, t, c or g

<400> 388
cgnccaaccc gaattggttt tcggcgccnt cggtgaggac ggcgtgcggg tgctcaacga 60
cgacgtcgtc cgcgggacac acctcgatgc tgccgccatg gacgcggtcg aacgcaagca 120
gctgatcgag ctacaacgcc gcgcggaacg cttccgccnc nggcgttacc gcatcccgtt 180
gaccgggcgg atcgcggtga tcgtcgatga cggcatcgcc accggagcga cggccaaggc 240
ggcgtgccag gtcgcccggg cgcacggtgc ggacaaggtg gtgctggcgg tcccgatcgg 300
cccanacgac atcgtggcga gattcgccgg 330

<210> 389
<211> 346
<212> DNA

<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (109)
<223> a, t, c or g

<220>
<221> modified_base
<222> (182)
<223> a, t, c or g

<220>
<221> modified_base
<222> (193)
<223> a, t, c or g

<220>
<221> modified_base
<222> (226)
<223> a, t, c or g

<220>
<221> modified_base
<222> (233)
<223> a, t, c or g

<220>
<221> modified_base
<222> (247)
<223> a, t, c or g

<400> 389
cgtgactgcc accggggcca ctccgcagaa tctgtacccg accaagatct acaccatcga 60
atacgacggc gtcgccgact ttccgcggta cccgctcaac tttgtgtcna ccctcaacgc 120
cattgccggc acctactacg tgcactccaa ctacttcatc ctgacgccgg aacaaattga 180
cncagcggtt ccnctgacca atacggtcgg tcccacgatg acccantact acntcattcg 240
cacgganaac ctgccgctgc tagagccact gcgatcggtg ccgatcgtgg ggaacccact 300
ggcgaacctg gttcaaccaa acttgaaggt gattgttaac ctgggg 346

<210> 390
<211> 355
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (13)
<223> a, t, c or g

<220>
<221> modified_base
<222> (24)
<223> a, t, c or g

<220>
<221> modified_base
<222> (353)
<223> a, t, c or g

<400> 390
tcgctcaagc gcntgaggcc gaancggctg gttacgactc cctgtttgtg atggaccact 60

```
tctaccaact gcccatgttg gggacgcccg accagccgat gctggaggcc tacacggccc 120
ttggtgcgct ggccacggcg accgagcggc tgcaactggg cgcgttggtg accggcaata 180
cctaccgcag cccgaccctg ctggcaaaga tcatcaccac gctcgacgtg gttagcgccg 240
gtcgagcgat cctcggcatt ggagccggtt ggtttgagct ggaacaccgc cagctcggct 300
tcgagttcgg cactttcagt gaccggttca accggctcga aaaggcgcta canat     355
```

<210> 391
<211> 403
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (82)
<223> a, t, c or g

<400> 391
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atactcaagc ttccgctggg gcctgttcaa ccatggcgat cccgttggtc ccggacatcc 60
cgaacgagga caccgcgacc cncttcggtg tgtgatcatt accgttgggc cactgcgtaa 120
ccgcttgcgg cacaaagagc ccggtctcga cgtcggaaag ctcatcgggc acccgattga 180
aatgcagcag cggcggcacc accccgtgcc gcagtgacag aattgccttg atcagcccga 240
cggtccccgc cgatgccgtg ctgtgcccca tgttgctctt ggccgatcca agcgcgcagg 300
gggtgcccgc gccatacacc cgcgccaggc tgcggtactc aatcgggtcg ccgattggcg 360
taccggtgcc gtgcgcctcc accacaccga ccgtttcggg ctg          403
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<210> 392
<211> 440
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (73)
<223> a, t, c or g

<220>
<221> modified_base
<222> (108)
<223> a, t, c or g

<220>
<221> modified_base
<222> (164)
<223> a, t, c or g

<220>
<221> modified_base
<222> (282)
<223> a, t, c or g

<220>
<221> modified_base
<222> (288)
<223> a, t, c or g

<220>
<221> modified_base
<222> (291)
<223> a, t, c or g

<220>

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<221> modified_base
<222> (293)
<223> a, t, c or g

<220>
<221> modified_base
<222> (306)
<223> a, t, c or g

<220>
<221> modified_base
<222> (326)
<223> a, t, c or g

<220>
<221> modified_base
<222> (335)
<223> a, t, c or g

<220>
<221> modified_base
<222> (346)
<223> a, t, c or g

<220>
<221> modified_base
<222> (354)
<223> a, t, c or g

<220>
<221> modified_base
<222> (370)
<223> a, t, c or g

<220>
<221> modified_base
<222> (378)
<223> a, t, c or g

<220>
<221> modified_base
<222> (380)
<223> a, t, c or g

<220>
<221> modified_base
<222> (382)
<223> a, t, c or g

<220>
<221> modified_base
<222> (384)
<223> a, t, c or g

<400> 392
caacagcgtt ccagcggcat accaccgcac atgccgtgca cccggcgccg ggcggagtcg 60
ccgcataaca cangtacacc ttgggaatcg gtgtgcgcca gggattcnac cgcggggtgg 120
ggccggcgat cgcgcgccag gtcgagttgg cgccgaccgt gatntcaccg ccgacgtagt 180
tggcgttgtg gtccgccatc cgcgcggcgg gcacggcgcg ggccgccacc acgatgtcac 240
ggaagccggg ggcgaacgct cgacgacctg gttaccgtct cngtcgcntc nancgtggac 300
ccgacngcac gtgggcatat gtccanaacg gacgnggccg gtttcntcga tgcngccggg 360
gtccgcgacn tgcggacncn cngncacacc atccgccagt ccgcgtggcg tcccgccgcg 420
actctgcctc ggccgcgcca                                          440
```

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<210> 393
<211> 353
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (12)
<223> a, t, c or g

<220>
<221> modified_base
<222> (36)
<223> a, t, c or g

<220>
<221> modified_base
<222> (61)
<223> a, t, c or g

<220>
<221> modified_base
<222> (83)
<223> a, t, c or g

<220>
<221> modified_base
<222> (343)
<223> a, t, c or g

<400> 393
ctcaagcttt gncgacgatc gggcgatgtc gatganagga aaccccagcg cacaaccgac 60
nattttggcg tagccggcgg acntctgctc gattccgatc acgtcggcgc tcgcatcgag 120
catggcgccg gcgacggcta gcagcgatcc gccgtcgtcg aggaacacga cacgagccgt 180
acgcccggcc gtaagccgcg cccaggattc ggcgaaaaac cgttctacgt ggcgggtgta 240
ctgggtgtcc aatgattcgt ggggtgcgta ggcgtcgctg caatcgtcga cataaatgcc 300
gtcggcccgc atcgcgtcaa caactcccgg gtgagtggaa tancacttgc cga 353

<210> 394
<211> 340
<212> DNA
<213> Mycobacterium tuberculosis

<400> 394
tccaacgcgg tgacagattt gtctatcctg gacctgacgg tgaggtcgaa gttttccagg 60
aattcggcaa aatcggtaag agcctgaaga attcggtatc gccggacgaa atctgcgacg 120
catacggggc agatacgctt cgggtttacg agatgtcgat ggggccgctg gaggcttcac 180
gtccatgggc cacaaaggat gttgtcggcg cgtaccgttt tctgcagcgg gtgtggcgct 240
tggtcgtcga cgagcacacc ggcgaaactc gggtggctga cggcgtggaa ctcgacatcg 300
atacgctacg ggcgttgcac cgcaccatcg tcggcgtgtc 340

<210> 395
<211> 362
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (30)

<223> a, t, c or g

<220>
<221> modified_base
<222> (45)
<223> a, t, c or g

<220>
<221> modified_base
<222> (70)
<223> a, t, c or g

<220>
<221> modified_base
<222> (244)
<223> a, t, c or g

<220>
<221> modified_base
<222> (247)
<223> a, t, c or g

<220>
<221> modified_base
<222> (296)
<223> a, t, c or g

<400> 395
ctcgtccttg actacgccca gtatcgaaan cctcctgtgc cggtncgcta aacacccggc 60
ggacactcan acggtgctgg tggtgcggca tggcaccgcg ggcagcaaag cgcacttctc 120
cggggacgac agcaagcgac cgctagacaa gaggggtcgt gcgcaggcag aagcgttggt 180
accacagctg ctggcgttcg gcgccaccga tgtttatgcc gccgaccggg tgcgctgcca 240
ccanacnatg gagccactcg ccgcggaact gaacgtgacc atacacaacg agcccnccct 300
gaccgaagag tcctacgcca acaaccccaa acgcggccga caccgagtgc tgcagatctt 360
cg   362

<210> 396
<211> 356
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (12)
<223> a, t, c or g

<220>
<221> modified_base
<222> (327)
<223> a, t, c or g

<220>
<221> modified_base
<222> (355)
<223> a, t, c or g

<400> 396
gtatcgcctc cncctttggc caccagcagc cacagcgcgg ttcgcggacc gaacgtggac 60
atcaatagcc cggaatcggt gtgtgcaagt tggtaaacgg tgttgatccc aagctttgcc 120
agccttttcg tagtcttggg ccccacaccc cacagtgctt cgacggtacg gtcacccatg 180
atggccatcc agttggcatc ggtgagctga tagatgccag ctggtttcgc caacccggta 240
gcgatcttgg cgcgctgctt gttgtcactg atacctatcg agcaagacag cccggtttgc 300

gacaagatga cttttcggat ctcttcngcg aacttccaat ggggtctcc gggant   356

<210> 397
<211> 350
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (99)
<223> a, t, c or g

<220>
<221> modified_base
<222> (102)
<223> a, t, c or g

<220>
<221> modified_base
<222> (274)
<223> a, t, c or g

<220>
<221> modified_base
<222> (293)
<223> a, t, c or g

<220>
<221> modified_base
<222> (295)
<223> a, t, c or g

<220>
<221> modified_base
<222> (326)
<223> a, t, c or g

<400> 397
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ctgtccggga aatggcgggt ccccggtggt tttgctgang antgctgaac cgtagtcgaa 120
gtgggcggcg tcagactcca cccagccagc aggcagcgcg aagctgaatc ctccaaccgg 180
gttgtcgatc cggacaggtt ggggtgcgtt tggggcaatg acaggtggcg gcggtgcgtt 240
cgggtcggcc ggcggaggtg ctgcgttggg atcncccggc tgggcattcg gcntnttggc 300
ggcggccggt ggtggggggg caacangtgt cccggtgcgg gtggcgctgc   350

<210> 398
<211> 355
<212> DNA
<213> Mycobacterium tuberculosis

<400> 398
atctgtaccc gaccaagatc tacaccatcg aatacgacgg cgtcgccgac tttccgcggt 60
acccgctcaa ctttgtgtcg accctcaacg ccattgccgg cacctactac gtgcactcca 120
actacttcat cctgacgccg gaacaaattg acgcagcggt tccgctgacc aatacggtcg 180
gtcccacgat gacccagtac tacatcattc gcacggagaa cctgccgctg ctagagccac 240
tgcgatcggt gccgatcgtg gggaacccac tggcgaacct ggttcaacca aacttgaagg 300
tgattgttaa cctgggctac ggcgacccgg cctatggtta ttcgacctcg ccgcc   355

<210> 399
<211> 360

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<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (41)
<223> a, t, c or g

<220>
<221> modified_base
<222> (59)
<223> a, t, c or g

<220>
<221> modified_base
<222> (198)
<223> a, t, c or g

<400> 399
ctcaagcttg caatgcgggt cgggatgccc atggttggaa natggtcgcc ctggcgtcna 60
atacgcgcga gcgcatgagc tcaccggttc ggaacaacgt atcgaaaaac gtcgcactgc 120
tggcagatgg tatctccgat gtggttgtaa tttgtatccc aactctaact gtgctatcgg 180
atcagcgtga atatcganat attgcgaatg cgatgacagg ccgccattcg gtttattcgc 240
ttacgcttcc cgggttcgat tcgtctgatg cactgccgca aaacgcggat atgattgttg 300
aaaccgtatc taacgcaatt attgatgtgg taggcggcag ctgccgtttt gtgctgtcgg 360


<210> 400
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<400> 400
caaatacacg ccggacgcac aggcggacat cgccatcccg agcacaccca aaacgggata 60
caggatggag gccaacgcca cggccgcgcc caggatcacc aaccacaccg gcttggtcag 120
cttgtcggcg gcggtatagg catcgggccg ctgcaacgca gcatgcacaa acgcgtacac 180
cgctgtcacc aagacggcga ccagcaatac cagcatgacg gtacccacga ggtggctcac 240
gcattcagac tatgcggttt gcatccaaca cg 272


<210> 401
<211> 306
<212> DNA
<213> Mycobacterium tuberculosis

<400> 401
ctcgtccttc ggcctcgctg caggagtggg agccgcaggg ctggaaatcc gaaaaacgag 60
ccggtgatcg cactgtcgcc gatcggcgcc gcacctggtt ggtgttacgg atgaatccgc 120
agcgaaatgt ggctgcggtg gcgtgtcgtg actcgttggc gtcgacgctg gtggcagcca 180
ccgagcggtt ggtccaggat ctggatgggc aaagttgtgc ggcccggccg gtgacggccg 240
atgagctgac cgaggtcgac agcgccgtgt ggctgactt ggaaccgaca tggagtcgcc 300
ccggtt 306


<210> 402
<211> 300
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (7)
<223> a, t, c or g
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<220>
<221> modified_base
<222> (90)
<223> a, t, c or g

<400> 402
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tggcgggtcc ccggtggttt tgctgaagan tgctgaaccg tagtcgaagt gggcggcgtc 120
agactccacc cagccagcag gcagcgcgaa gctgaatcct ccaaccgggt tgtcgatccg 180
gacaggttgg ggtgcgtttg gggcaatgac aggtggcggc ggtgcgttcg ggtcggccgg 240
cggaagtgct gcgttgggat cgcccggctg ggcattcggc gtgttggcgg cggccggtgg 300

<210> 403
<211> 396
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (113)
<223> a, t, c or g

<220>
<221> modified_base
<222> (318)
<223> a, t, c or g

<220>
<221> modified_base
<222> (346)
<223> a, t, c or g

<220>
<221> modified_base
<222> (390)
<223> a, t, c or g

<400> 403
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tgcagtttgt gcatcaggcc gatgccgcgg ccctcgtggc cacgcatgta cancaccacg 120
ccgcgcccct cacgggcgac catcgccagc gcggcgtcca gctgaggccc gcaatcgcag 180
cggcgtgacc caaacacatc gccggtcaag cactccgaat gcacccggac cagcacgtcg 240
tcaccgtcgg cgttgggccc ggcgatctcg ccgcggacca gcgcgacatg ttccacgtcc 300
tcgtaaatgc tggtgtancc gatggcgcga aactccccat gacaantcgg aatcccgcgc 360
ctcggcgacc ccgctcaatg ttgcttctcn tgcttg 396

<210> 404
<211> 352
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<220>
<221> modified_base
<222> (19)
<223> a, t, c or g

<400> 404
tcgacnagca ttcttgacng ttgttttggc tcggcatggt tagccaaggt tctgcggtcc 60
caccagatca tcttggtccg gtagcgctcg tccgggtatg ctgccgccgg gattctcgct 120
gctattactc cccccgaaga acgccaccgg tccagcgcgt gggccgccgc ggtccccatc 180
acaaactgaa cccccaacag gggacatgct tagcggtagg gcgcgcgcca aggcggcagc 240
aatcgcatca ctgcgctgcg cgtcactatt aacccacccg gacttcactt ccacgacccc 300
gaatggcgcc cggtcattga tcatcttgcg caccgcggat aatccgggat tg   352

<210> 405
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (36)
<223> a, t, c or g

<220>
<221> modified_base
<222> (99)
<223> a, t, c or g

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<220>
<221> modified_base
<222> (207)
<223> a, t, c or g

<220>
<221> modified_base
<222> (216)
<223> a, t, c or g

<220>
<221> modified_base
<222> (237)
<223> a, t, c or g

<220>
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<222> (321)
<223> a, t, c or g

<220>
<221> modified_base
<222> (328)
<223> a, t, c or g

<220>
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<222> (345)
<223> a, t, c or g

<220>
<221> modified_base
<222> (353)

<223> a, t, c or g

<220>
<221> modified_base
<222> (369)
<223> a, t, c or g

<220>
<221> modified_base
<222> (385)
<223> a, t, c or g

<220>
<221> modified_base
<222> (408)..(409)
<223> a, t, c or g

<400> 405
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gtcgccgact ttccgcggta cccgctcaac tttgtgtcna ccctcaacgc cattgccggc 120
acctactacg tgcactccaa ctacttcatc ctgacgccgg aacaaattga cgcngcggtt 180
ccgctgacca atacggtcgg tcccacnatg acccantact acatcattcg cacgganaac 240
ctgccgctgc taaagccact gcgatcggtg ccgatcgtgg ggaacccact ggcgaacctg 300
gttcaaccaa acttgaaggt nattgttnac ctgggctacg gcganccggc ctntggttat 360
tccacctcnc cgcccaatgt ttgcnactcc cgttcggggt tgttcccnna aggtcaaccc 420

<210> 406
<211> 328
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (12)
<223> a, t, c or g

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (277)
<223> a, t, c or g

<400> 406
cgctcaagcg cntgaggccg aancggctgg ttacgactcc ctgtttgtga tggaccactt 60
ctaccaactg cccatgttgg ggacgcccga ccagccgatg ctggaggcct acacggccct 120
tggtgcgctg gccacggcga ccgagcggct gcaactgggc gcgttggtga ccggcaatac 180
ctaccgcagc ccgaccctgc tggcaaagat catcaccacg ctcgacgtgg ttagcgccgg 240
tcgagcgatc ctcggcattg gagccggttg gtttganctg gaacaccgcc agctcggctt 300
cgagttcggc actttcagtg accggttc   328

<210> 407
<211> 315
<212> DNA
<213> Mycobacterium tuberculosis

<400> 407
ctcaagcttg cgttcgatga agtagtcgtc ggtcagcgcc gcctcttcga gctccttggc 60

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gatgcccagc aaggagtcat cgccgccgag cttggccagg atcttgtcgg cctgttcctt 120
gacgatgcgg gcccgcggat cgtagttctt gtagacacga tgaccgaaac ccatcaattt 180
gaccccggcc tcgcggttct tgaccttgcg tacaaactcg ctgacgtcgt cgccgctgtc 240
gcgaatgccc tcgagcatct ccaggacagc ctgattggcg ccgccatgaa gcggacccca 300
tagtgcgttg atgcc                                                  315
```

<210> 408
<211> 329
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (200)
<223> a, t, c or g

<220>
<221> modified_base
<222> (281)
<223> a, t, c or g

<400> 408
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ggtcaggccg agcaggcgcg aggaacgacg aacccaacaa gccatggtgg ttggcgccgt 60
cgagaggtcg gcggtcgcca caacgggaag atcgccttga gcgtcgctcg accgccgcct 120
cgagttgggt cataacgaag tagctgatgc cgatcatgtc gacgtttccg tcgcatcagc 180
gtgcagcggc gacccactcn acgaggtctc ggtgccgccg cggccagggc accagcagtg 240
acgagtccag cgccgtcgg gccaagcagt cgcggtgcca nccgtggtgg gtcgggcgat 300
ggttgggtgt gctcatttcg ggaacgcca                                   329
```

<210> 409
<211> 294
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (48)
<223> a, t, c or g

<220>
<221> modified_base
<222> (194)
<223> a, t, c or g

<220>
<221> modified_base
<222> (204)
<223> a, t, c or g

<220>
<221> modified_base
<222> (206)..(207)
<223> a, t, c or g

<220>
<221> modified_base
<222> (271)
<223> a, t, c or g

<400> 409
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ctcgaagctt taacagcatc aaccccgccc cgcaccagca ccgacacnat gtcgatgcca 60
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tcgaggtgaa tgtcgaactg gcgcaaacca tcggcgaccg cgaccaccgg caacatgggt 120
accggcgatt tccggtgcca atgccgaccc gacgggccgc tctcaccgca ggtgacctcg 180
atcaccgaga ccanccggcc gttntnntca cgcaccccta ccgtgtcacg cccaaaacgg 240
cgctggtggt cgattgccgg agtgcacccc ncacccagtg tcgtgcccgg atcc        294
```

<210> 410
<211> 288
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (168)
<223> a, t, c or g

<220>
<221> modified_base
<222> (210)
<223> a, t, c or g

<220>
<221> modified_base
<222> (228)
<223> a, t, c or g

<400> 410
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tgatgccgca cccgatcgac ggtcgttggt cggggttgac tggccgcccg gcgaagcagg 60
gcgtcgaccg cggcccggac gtcggcggcc gtcaccggtc ggccattgcc cgggcgggag 120
tcgtcgagct gaccacggta gacaagtcgg cgctggccgt cgaagacnaa cgtgtcgggt 180
gtgcaggccg cggagaaggc gcgggcgacn tcttgggttt cgtcgtanag atacgggaac 240
gtccagccgt ggcggcgggc ctcggcgacc atctgatcgg gcccgtcc            288
```

<210> 411
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (20)
<223> a, t, c or g

<220>
<221> modified_base
<222> (27)
<223> a, t, c or g

<220>
<221> modified_base
<222> (51)
<223> a, t, c or g

<220>
<221> modified_base
<222> (98)
<223> a, t, c or g

<220>
<221> modified_base
<222> (148)
<223> a, t, c or g

<220>
<221> modified_base
<222> (214)
<223> a, t, c or g

<220>
<221> modified_base
<222> (293)
<223> a, t, c or g

<220>
<221> modified_base
<222> (299)
<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
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<222> (328)
<223> a, t, c or g

<220>
<221> modified_base
<222> (342)
<223> a, t, c or g

<220>
<221> modified_base
<222> (356)
<223> a, t, c or g

<400> 411
tttcgggcga ggcggtatan cttcccntcg taccggcgac cgccagccga naagctcgtt 60
ttcccagtgt tgctgggggat tctcacgctg ctgctgantg cgtgccaaac cgcttccgct 120
tcgggttaca acgagccgcg gggctacnat cgtgcgacgc tgaagttggt gttctccatg 180
gacttgggga tgtgcctgaa ccggttcacc tacnactcca agctggcgcc gtctcgtccg 240
caggtcgttg cttgcgatag ccgggaggcc cggatccgca atgacggatt ccntgccanc 300
gctccgagtt gcntgcggat cgactacnaa ttgatcaccc anaaccatcg ggcgtnttac 360
tgcctgaagt acctggtgcg ggtcggatac tgctatccgg cggtgacaac cccggcaagc 420

<210> 412
<211> 378
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (341)
<223> a, t, c or g

<400> 412
gttttggctc ggcatggtta gccaaggttc tgcggtccca ccagatcatc ttggtccggt 60
agcgctcgtc cgggtatgct gccgccggga ttctcgctgc tattactccc cccgaagaac 120
gccaccggtc cagcgcgtgg gccgccgcgg tccccatcac aaactgaacc cccaacaggg 180
acatgcttag cggtagggcg cgcgccaagg cggcagcaat cgcatcactg cgctgcgcgt 240
cactattaac ccacccggac ttcacttcca cgaccccgaa tggcgcccgg tcattgatca 300
tcttgcgcac cgcggataat ccgggattgc cagcccattc nactaccgca tgcgagtcat 360

cggctgaccg cagcggtc

<210> 413
<211> 347
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<220>
<221> modified_base
<222> (69)
<223> a, t, c or g

<220>
<221> modified_base
<222> (91)
<223> a, t, c or g

<220>
<221> modified_base
<222> (254)
<223> a, t, c or g

<400> 413
tcgcctaggc gggcttcccc ttccgtccga gcngtcagaa gctcctatga caatgcacta 60
cccgagacna tcaacggcct atgcaatacc nagctgatca aacccggcaa gccctggcgg 120
tccatcgagg atgtcgagtt ggccaccgcg cgctgggtcg actggttcaa ccatcgccgc 180
ctctaccggt actgcggcga catcccgccg gtctaactcg acgccgcctc actacgctca 240
acgccagaga ccanccgccg gctgacgtct cagatcagag agtctccgga ctcaccgggg 300
cggttcatcc ccactgtcga tagcgtctgt ggataacttt gtctgca 347

<210> 414
<211> 165
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (7)
<223> a, t, c or g

<220>
<221> modified_base
<222> (37)
<223> a, t, c or g

<400> 414
gcgcgtngaa ctgataggtg cggcccggct cgagcangcc ggccatttgt tcgatgcggt 60
taccgaagat ctcttcggtg acctgcccgc cgccggccag ctcggcccag tgcccggcgt 120
tggccgccgc ggcgacaatc ttggcgtcca cggtggtctg ggtca 165

<210> 415
<211> 317
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (57)
<223> a, t, c or g

<400> 415
ctcaagcttc aatacagagt tataaactgt gataatcaac cctcatcaat gatgacnaac 60
taacccccga tatcaggtca catgacgaag ggaaagagaa ggaaatcaac tgtgacaaac 120
tgccctcaaa tttggcttcc ttaaaaatta cagttcaaaa agtatgagaa aatccatgca 180
ggctgaagga aacagcaata actgtgacaa attaccctca gtaggtcaga acaaatgtga 240
cgaaccaccc tcaaatctgt gacagataac cctcagacta tcctgtcgtc atggaagtga 300
tatcgcggaa ggaaaat   317

<210> 416
<211> 379
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (236)
<223> a, t, c or g

<220>
<221> modified_base
<222> (277)
<223> a, t, c or g

<220>
<221> modified_base
<222> (302)
<223> a, t, c or g

<400> 416
ctcaagcttc gatcgacatt actcccgcct tgggtctggt ctccgagctg gtcggtcatg 60
gtcggacctg ctggtagtgg ggatctaacg caacatggtc gggattcatc atggtgtacc 120
cgtgataccc attcgcagct gccggtgaaa ccccgcgatg ccgggatttc cagccgcact 180
aggatgtcta gccggccagc cgctgccgcc ggacttcggg atgttcggta taccancgat 240
cggcaatctt gcgtatccgc cgatgctcga acgctancca cgccaaacca accactgtga 300
cnacaatcgc caccacacca aaggtcatgc cctcggcgtg atgtccggtg ccgaaagccg 360
caagagctcc gacgccgcc   379

<210> 417
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<400> 417
cattcccaat tgaatttccc natcccacaa tctcggttca gatacaggtc gccatacccc 60
ttacttcggc aacgctgggc ggattggccc tgccgctgca gcanaccatc gacgccatcg 120
aattgccggc aatctcgttc agccaatcca tacccatcga cattccgccg atcgacatcc 180

```
cggcctccac tatcaacgga atttcgatgt cggaggtcgt gccgatcgat gtgtccgtcg 240
acattccggc ggtcaccatc accggcacca ggatcgaccc gattccgctg aacttcgacg 300
ttctcagcag cgccggaccc atcaacatct cgatcatcga cattccggcg ctgccgggct 360
ttggcaactc gaccgagctg ccgtcgtcgg gcttcttcaa caccggcggc ggtggcggct 420
```

<210> 418
<211> 255
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (26)..(27)
<223> a, t, c or g

<400> 418
```
ctcaagcttt cggcggagac ggacannttg cgaacattga tgacaaaata gaaatcattg 60
atggtttgag tcaccaggcc gatcaagcct tcgccgagcc aaattccaat caagaggccc 120
aagcccgtac caatcagccc ggcaacgagg gattccgtca ttatcagcca aaataactgc 180
tctcgggtta cacccaaaca gcgcaatatg gcgaaaaacg gtcgccgttg cacgacatta 240
aatgtcacgg tattg                                                  255
```

<210> 419
<211> 359
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (64)
<223> a, t, c or g

<220>
<221> modified_base
<222> (78)
<223> a, t, c or g

<220>
<221> modified_base
<222> (244)
<223> a, t, c or g

<400> 419
```
agcttaactg ctccctaata cctggggctg tgcctgcggt gtatgcacgg catacggaca 60
tccntcccct gagacccncg gtctaatcag ccacgtgtcc accatcaggg gtcaaccccg 120
gccaagggcg acggcacccc aagttcgccg accgttaacc tattgctgtg agcttcattt 180
gctgcgagca aaacagttgg tcggccgtta ggaactgaat tgacactcaa ccgatttggt 240
gccnccgtag gtgtcctggc tgcgggtgcg ctggtgttgt ccgcgtgtgg taacgaccac 300
aatgtgaccg ggggaggtgc aaccactggc cacgcgtccg cgaatgtcta ttgcggggg  359
```

<210> 420
<211> 314
<212> DNA
<213> Mycobacterium tuberculosis

<400> 420
```
ctcaagcttg gggtggcgct gtcggtcggt gtgcttggcg gcgtcggtat caacaccgcc 60
cacgaaatgg ggcacaagaa ggattcgctg gagcggtggc tgtccaaaat caccctcgcc 120
cagacctgct acgggcactt ctacatcgag cacaaccgtg gccatcacgt ccgggtgtcc 180
acaccggagg acccggcgtc ggcgcggttc ggcgaaacgt tgtgggagtt cctgccccgc 240
```

agtgttatcg gcggcttgcg ctcggccgtt catttggagg cccaacggct gcgtcggctc 300
ggcgtcagcc ccct   314

<210> 421
<211> 280
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (162)
<223> a, t, c or g

<400> 421
gcaccaaggc cccacacgtc accctgtgac ctcctgcgcc gaccccgccc gaggtcctgg 60
ccgttaccac ctgaacgggc gagccgggag tctggtacgc atcgaacaaa gagcaaggtg 120
catgggcgga gttgttccgc cacttcgtcg atgacggggt cnatccattc gaggtccgtc 180
gccgcgtcgg tcgagtggcg gtcacactcc aggtactcga cctcacagac gagaggactc 240
gatcccatct aggtgtggac gaaacagatc ttctgtccga   280

<210> 422
<211> 230
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (145)
<223> a, t, c or g

<220>
<221> modified_base
<222> (230)
<223> a, t, c or g

<400> 422
tcgcctccgc atatgggtcg acgccaagcg ggtccggatt tctgggcttc atcgctcgcg 60
ccgtcgcgac aaacagcgcg gtcgaaccga cactcgttgt gatgtcccag ctatcacctt 120
cggtacgcac ccaatcgacc ctacncggct atctcagccg cgatctccag gctccgccga 180
gccaggtgca tcccggtccg gatcccacta acccggcacc attggcgtcn   230

<210> 423
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<400> 423
gtcctcgagt gccgccgtcg ncacncccag cgcccgcgcg gccacttgga tgcgacccgt 60
ttcaagtccc ttcatcatct gcgaaaagcc ttgacccatg gctccgccca ggatcgccga 120
gaccggcacc cggaggttgt cgaacgacag ctcgcaggat tcgacgccct tgtaacccaa 180

```
cttcggcaag tcccgcgaca ccgtgagtcc cggcccgggt tcgacgagca cgatcgacat 240
gccttggtgc cgcggtgtgg cgttcgggtc gg                                272
```

<210> 424
<211> 423
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (69)
<223> a, t, c or g

<220>
<221> modified_base
<222> (76)
<223> a, t, c or g

<220>
<221> modified_base
<222> (81)
<223> a, t, c or g

<220>
<221> modified_base
<222> (93)
<223> a, t, c or g

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<220>
<221> modified_base
<222> (141)
<223> a, t, c or g

<220>
<221> modified_base
<222> (173)
<223> a, t, c or g

<220>
<221> modified_base
<222> (179)
<223> a, t, c or g

<400> 424
```
ggcataccaa tgtggacttc tgctcaccca cgatatccgt ggtctgatcc gctgctgcgg 60
cgggctgcna cctgcntctc ngcggcaccc gtnactacat ggcncgcgcc gcacgcatac 120
gtcgcggcgg gacccactcc nactggtcga cggtgctggc cgcgtgtccg cangtcccna 180
acccggccgc accgacgaaa ccggccgccg tccgttctgg accaacgctc atgtgccgtc 240
ggggtccatg ctcgacgcca tcgagaccgt aaccagcgtc ctcgagcggt tcgcctccgg 300
cttccgtgac atcttcgtgg ctgctcgcgc cgtgccgccg cgcggatggt cgaccacaac 360
gccaaccacc tcggcggtga catcaccgtc cgcgccactc gacctggcgc gcgatcgcgg 420
ccc                                                               423
```

<210> 425
<211> 315
<212> DNA

<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (18)
<223> a, t, c or g

<220>
<221> modified_base
<222> (55)
<223> a, t, c or g

<220>
<221> modified_base
<222> (245)
<223> a, t, c or g

<220>
<221> modified_base
<222> (269)
<223> a, t, c or g

<220>
<221> modified_base
<222> (286)
<223> a, t, c or g

<220>
<221> modified_base
<222> (308)
<223> a, t, c or g

<400> 425
gtgagcagac ctacgccncc tggttgcgcc aactcggtac cgatcatggc gcgcngcctg 60
tcgtcaccga tacccagcga acaagacagc ccggtccgcg acaagatgac tttcccgatc 120
tcttcggcga cttccatggg gtcgtccgga gtcccgggcg ccaccgcgag gtaaccctcg 180
tctcagtccc atacgcgacc gggtatccac gtcgcgcaac aacgccacca cctccccaga 240
cgccncgttg tacgcggctg ggttccacng caataagtgg cctcanggca tcgtccggcg 300
gcggtccnca acgca 315

<210> 426
<211> 335
<212> DNA
<213> Mycobacterium tuberculosis

<400> 426
ctcaagcttg aggttaactt tgaacggatc gagctggacg ttcgagacgg tgatcgggcc 60
gaacctgaat tgtccggtaa tgcccaacgc aaaaagcagg gtggtggccg gggcggtgaa 120
accggcgtcg gcggcaccgt cgaaatctat gtggattgcc ggaatgggga tgtccggcac 180
ggcgaaaccg tagttcgctt gtcccgtgag gcccaggtgg atggggggaa agatcctggt 240
gtccgggata ataatggggc cgatgccgcc ggttgaagtc cactggatcg ggaattccgg 300
aatcttgatc cgacgttcag gccgaacagg ccctc 335

<210> 427
<211> 346
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (188)

<223> a, t, c or g

<220>
<221> modified_base
<222> (226)
<223> a, t, c or g

<400> 427
cggcgacgtc gcgatacgcc gagcagttgg gaatcgctct gcagcaaacc aatattctgc 60
gcgacgttcg agaggacttt ttgaatggac ggatctacct gccgcgcgac gagctggacc 120
gattaggcgt acgcctccgc ctggacgaca ccggggcact cgatgacccc gacggacggc 180
tcgcggcnct gctgcggttc agtgccgacc gcgccgcaga ctggtnttcg ctgggactgc 240
ggctgattcc acacctcgac cgccgcagcg ctgcctgctg tgcggccatg tctggcatct 300
accgccgtca gctcgccttg atcagagcat cgccggcggt cgtcta 346

<210> 428
<211> 332
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (137)
<223> a, t, c or g

<220>
<221> modified_base
<222> (149)
<223> a, t, c or g

<220>
<221> modified_base
<222> (212)
<223> a, t, c or g

<220>
<221> modified_base
<222> (218)
<223> a, t, c or g

<220>
<221> modified_base
<222> (254)
<223> a, t, c or g

<220>
<221> modified_base
<222> (258)
<223> a, t, c or g

<220>
<221> modified_base
<222> (283)
<223> a, t, c or g

<220>
<221> modified_base
<222> (318)
<223> a, t, c or g

<400> 428
ctataaaata ctcaagcttg atgccgccga aaccgagcgt gagcacgccg ccagccacca 60

```
cgcgcgggtc gggcgccggg cccgggccgc caggctgctc cgctcggtga tggcacgcca 120
ccgcgacacc acccggntgc gctacgtcna gccataccgg gcggagctac atcggctcgg 180
ccgcccagtg ttcgggccct ctttcgaggt cnaggtcnat accgatttgc gcatccgcag 240
ccgcaccctg aacnacanaa ccgtgcccta ctattgcttg tcnggcgggg ccaaaaaaca 300
gcttggcatc ctggcccnat tggccggcgc gg                              332
```

<210> 429
<211> 276
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (249)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<220>
<221> modified_base
<222> (260)
<223> a, t, c or g

<220>
<221> modified_base
<222> (263)
<223> a, t, c or g

```
<400> 429
cttcggtcgc agtgtgcgag tgatagatga cgaccgggac ctcgtcggca tcttccatag 60
cccgccacac cttcagttgc tcaccggaat ccaaccggta gaaggtcggc gagcgctcgg 120
cattggtcat cgggatatgc cgctcgggac ggtcagagcc ctcgggtccg ccagcactc 180
cgcaggcttc gtcggggtgg tcgcgacgcg catgggccac catcgcattc accaggtctg 240
cgcgaatcnc cancacgtan acngttcctt tcctaa                          276
```

<210> 430
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (99)
<223> a, t, c or g

<220>
<221> modified_base
<222> (113)
<223> a, t, c or g

<220>
<221> modified_base
<222> (164)
<223> a, t, c or g

<220>
<221> modified_base
<222> (195)

<223> a, t, c or g

<220>
<221> modified_base
<222> (233)
<223> a, t, c or g

<220>
<221> modified_base
<222> (243)
<223> a, t, c or g

<220>
<221> modified_base
<222> (263)
<223> a, t, c or g

<220>
<221> modified_base
<222> (284)
<223> a, t, c or g

<220>
<221> modified_base
<222> (389)
<223> a, t, c or g

<220>
<221> modified_base
<222> (397)
<223> a, t, c or g

<400> 430
ctggcaccaa ggccccacac gtcaccctgt gacctcctgc gccgaccccg cccgaggtcc 60
tggccgttac caccgaacgg gcgagccggg agtctggtnc gcatcgaaca aanagcaagg 120
tgcatgggcg gagttgttcc gccacttcgt cgatgacggg gtcnatccat tcgaggtccg 180
tcgccgcgtc ggtcnagtgg cggtcacact ccaggtactc gacctcacag acnaaaggac 240
tcnatccat ctaggtgtgg acnaaacaga tcttctgtcc gacnactaca ccaccaccca 300
ggccatcgcc gccgcccgcg atgccaactt cgacgccgta ctggccccgg cggggggcgc 360
tccccggttg tcaacacttg ccgtgttcnt tcacgcnctg ccccacatcc aaccccaacg 420

<210> 431
<211> 130
<212> DNA
<213> Mycobacterium tuberculosis

<400> 431
gttcttgggc ccatgcggag gtatcgccgt ttccaccacg cggtcggggt ggcgttgcat 60
tagctcaccg atggtgcgct tgtgcaggcc gccgggatac cccgagtgcc ggtaaaccat 120
cttgtgctgc 130

<210> 432
<211> 215
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (81)
<223> a, t, c or g

```
<220>
<221> modified_base
<222> (84)
<223> a, t, c or g

<400> 432
caatactcaa gcttggcgtg ccgttccaac ccgaattggc tttcggcgcc atcggtgagg 60
acggcgtgcg ggtgctcaac nacnacgtcg tccgcgggac acacctcgat gctgccgcca 120
tggacgcggt cgaacgcaag cagctgatcg agctacaacg ccgcgcggaa cgcttccgcc 180
gcgggcgtga ccgcatcccg ttgaccgggc ggatc 215


<210> 433
<211> 360
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<400> 433
cntcatgatg atcatcaccc gaagtgtggt agccgcagtg gttatcgtgg gtaccgtcgt 60
gctttccatg ggcgcctctt tcgggctttc cgtattggtc tggcaggaca ttctgggtat 120
cgagttgtac tggatggtgt tggcgatgtc ggtgatcctg ctcctggcgg tgggatccga 180
ctacaatctg ctgctgattt cccggttgaa agaggaaatt ggggccggat tgaacaccgg 240
aattatccgt gccatggctg gtaccggggg agtggtgacg gctgccggca tggtgttcgc 300
cgttaccatg tcgttgtttg tgttcagcga tttgcgaatt attggtcaga tcggtaccac 360


<210> 434
<211> 265
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (26)
<223> a, t, c or g

<220>
<221> modified_base
<222> (135)
<223> a, t, c or g

<220>
<221> modified_base
<222> (176)..(177)
<223> a, t, c or g

<220>
<221> modified_base
<222> (199)
<223> a, t, c or g

<220>
<221> modified_base
<222> (263)
<223> a, t, c or g

<400> 434
atactcaagc ttttacggtg atcgcncatc acctggttca tgaactggaa gcagcgcagc 60
```

```
gcttcctttt cggccgcaac atgagccagc ctctcgtcgg cggtcgggtg caggtgctcg 120
ggcagctcgg ccgcnacagc cgcctgaccc tgaaaccagc ttccatatcc cgcgannaac 180
gacgccagtc cgctacgtna cccctccgcg actgtccatg gacaacagcg cgttctccac 240
cgaccgggcc cgggtgtggg gtntt                                      265
```

```
<210> 435
<211> 264
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 435
gctggtagag tcgctgaccg gtgcaggttt cgacaatgtg gtgccggttc ggcggctacg 60
tgccatcgag acactggcgc aggctatcgc acccgttatc ggctacgagc aaatcgcggt 120
atgcgttctt gagcatgagt cggcgaccgt cgtcatggtc gacacccacg acggaaagac 180
gcagatcgcc gtcaagcatg tgtgccgcgg attatcagga ctgacctcct ggctgaccgg 240
catgtttggt cgcgatgcct ggcg                                      264
```

```
<210> 436
<211> 335
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (26)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (224)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (254)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (261)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (286)
<223> a, t, c or g
```

```
<400> 436
gctttccgcc gatacccgcc atgtcncgca catccaggac ttctgggggg atccgctgac 60
agcggcggga tcccaaagtg cggatgatcg ggccgcctac gtcgtggtgt acctcgtcgg 120
taacaacgaa accgaagcgt atgactcggt ccacgcggtg cggcacatgg tggacaccac 180
accgccaccg cacggggtga aggcctatgt caccggtccg gcancactca atgccgacca 240
ggccgaggcc gganacaaaa ntatcgctaa ggtcaccgcg atcacnagca tggtgatcgc 300
agcaatgttg ctagtgatct atcgctccgt aatta                          335
```

```
<210> 437
<211> 304
<212> DNA
<213> Mycobacterium tuberculosis
```

<220>
<221> modified_base
<222> (250)
<223> a, t, c or g

<400> 437
cttccaaccc gaattggctt tcggcgccat cggtgaggac ggcgtgcggg tgctcaacga 60
cgacgtcgtc cgcgggacac acctcgatgc tgccgccatg gacgcggtcg aacgcaagca 120
gctgatcgag ctacaacgcc gcgcggaacg cttccgccgc gggcgtgacc gcatcccgtt 180
gaccgggcgg atcgcggtga tcgtcgatga cggcatcgcc accggagcga cggccaaggc 240
ggcgtgccan gtcgcccggg cgcacggtgc ggacaaggtg gtgctggcgg tcccgatcgg 300
ccca 304

<210> 438
<211> 223
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<220>
<221> modified_base
<222> (158)
<223> a, t, c or g

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<400> 438
tactcaagct tcgcgagatc cggatggcac tcacgctgga caagaccttc acaaaatctg 60
aaatcctgac ccgatacttg aacctggtct cgttcggcaa taactcgttc ggcgtgcagg 120
acgcggcgca aacgtncttc ggcatcaacg cgtccganct gaattggcag caagcggcgc 180
tgctggccgg catggtgcaa tcnaccagca cgctcaaccc gta 223

<210> 439
<211> 263
<212> DNA
<213> Mycobacterium tuberculosis

<400> 439
cccacgactt tctcctcgat cagttggatt tgtacgaaga ggcaacgaaa gcagtgatcc 60
tcgggatggt cgacgcctac atcgacccgc cgttcacgcc gcacagcctg ctagatgcgc 120
tgggcgagca ggtcccacag ttcgccgcta aggcacggcg tctgttcccg tccggatcgc 180
cattcggcct cggcgtcctg ctcccattcg atcaataggg ctggcagctc cgtcggcagg 240
ggcctacgcc tcaccccgtc acg 263

<210> 440
<211> 301
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (60)
<223> a, t, c or g

<220>
<221> modified_base
<222> (109)
<223> a, t, c or g

<220>
<221> modified_base
<222> (111)
<223> a, t, c or g

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<220>
<221> modified_base
<222> (179)
<223> a, t, c or g

<220>
<221> modified_base
<222> (226)
<223> a, t, c or g

<220>
<221> modified_base
<222> (260)
<223> a, t, c or g

<220>
<221> modified_base
<222> (264)
<223> a, t, c or g

<220>
<221> modified_base
<222> (273)
<223> a, t, c or g

<220>
<221> modified_base
<222> (298)
<223> a, t, c or g

<400> 440
ctcaagctta tgcgcgccgg ccgaggtctg ctcacggcaa cccctgaagt ttaggggacn 60
acctactcag cgcaaaattt cgctaatgtg agtccgcccc accaggggna natcaaccca 120
tgtcgatcat gatctacccg gataccggat tggcggtagc gcccacgatc gtcnaaatnt 180
ccgcctgaat catcggatag ctgatccggc gtcaacgcgt tttganttca ccgcgcaaca 240
gccgccaggc cggcccgcan cganccgatc tcntcgggcc gcatgggccc caatctttntc 300
g   301

<210> 441
<211> 90
<212> DNA
<213> Mycobacterium tuberculosis

<400> 441
gtgtgtggtg gaacccatct gagcagtgtg ccaaaccggg gcagacagct cccaattgac 60
gtgagcccgc tcacttgctg ggtaagcgtc   90

<210> 442
<211> 183
<212> DNA
<213> Mycobacterium tuberculosis

<400> 442
ctttacactt cctgcatccg gctcgtatgt tgtgtggaat tgtgagcgga taacaatttc 60
acacaggaaa cagctatgac catgattacg ccaagctatt taggtgacac tatagaatac 120
tcaagcttgg gcgtgacggc caccggggcc actccgcacc atctgtaccc gaccaagatc 180
tac   183

<210> 443
<211> 348
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (94)
<223> a, t, c or g

<400> 443
caggcatgca agctttagct gcccgaatgc gtcaccccga tgcgcccaga tcggggcttc 60
gcagataaag cacgaacagg cgggcaaaac gtcnatctcg gagccggaag ggcaatcagc 120
cgaccgtcga cgaacgacac cggcgagacc acttaggcag tgacggccgg cccgaacatt 180
acgcgctcgt tgattaggcg ttcggtctcg tccgcggtca tgccgagcag cttgcggcag 240
atctgaacgc tgtcctgtcc gggcagcggc gccgggcgtt ggggtgcctg cccgaatgtg 300
acgaaacgga gccggacccg tctcggcggg ccgcggacgg cgatccgc   348

<210> 444
<211> 335
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<220>
<221> modified_base
<222> (43)
<223> a, t, c or g

<220>
<221> modified_base
<222> (84)
<223> a, t, c or g

<220>
<221> modified_base
<222> (130)
<223> a, t, c or g

<220>
<221> modified_base
<222> (132)
<223> a, t, c or g

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<220>
<221> modified_base
<222> (280)
<223> a, t, c or g

<220>
<221> modified_base
<222> (291)
<223> a, t, c or g

<220>
<221> modified_base
<222> (309)
<223> a, t, c or g

<220>
<221> modified_base
<222> (313)
<223> a, t, c or g

<400> 444
cncaagcttg cggatgttac ccctgacagc ctgaactatg tcnaaacaca cggcaccgga 60
acggtgttgg gggaccccat cganttcgag tcgctggcgg ccacttatgg cctgggtaaa 120
ggccagggcn anagcccgtg cgcattgggg tcggtcaaaa ccaacatcgg ccacctggag 180
gcggccgccg gtgtggctgg atncatcaag gcggtgctgg cggtgcaacg tgggcacatt 240
ccccgcaact tgcacttcac ccggtggaac ccggccatcn acgcgtcggc nacgcggctg 300
ttcgtgccna ccnaaaaccc cccgtggccg gcggc 335

<210> 445
<211> 289
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (155)
<223> a, t, c or g

<220>
<221> modified_base
<222> (212)
<223> a, t, c or g

<220>
<221> modified_base
<222> (249)
<223> a, t, c or g

<220>
<221> modified_base
<222> (251)
<223> a, t, c or g

<220>
<221> modified_base
<222> (289)
<223> a, t, c or g

<400> 445
ggaaccggta accagatcag ctcgtcgacc tcactgccgg gggtgaattc cccaccggtg 60
ctgcgcgctg cccagtagtg caccttcttg acgcctcgaa aaggggagtc ggtcgggtag 120
gtcaccgtca ggagccgcct acccaggttg gcgcnatagc cggtctcctc gagtatctcc 180
cgcaccgccc ccaccggtgc ggtctcaccc anatccactt tgcccttggg cagcgaccag 240
tcgtcgtanc nggggcggtg aatgacaacg atctcgaccg gcccttccn 289

<210> 446
<211> 263
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<400> 446
tactcaagct tcagaacagg cctgttgtgg gcncacccgg ctcgccgagt tctgcacgca 60
ccgcctcaag tgcggcccgc accgccggca tctcccggtc acgcagggcc gcggcccgcg 120
ccgcagcgac ggcgtgttcg cgcagttcgc cgtcaatgat gctgacctga tcggccaccc 180
gggcgttctc ggcgtcgtcg cgttcactaa tcgcggtgct cagcagcgtc tcgacagcca 240
ccacccgagt ggcgaccagc tgc 263

<210> 447
<211> 279
<212> DNA
<213> Mycobacterium tuberculosis

<400> 447
taatgtcttg ccaacgtcac cacaatcgcg atgaattcaa tcatgccgcc cagggcggcc 60
aacccaatgg tggccgcgag cggcagctcg atcgcagcgc ggaggttgcc ggccgccagt 120
tgattcacga acagggtgag gtcataggcg ggcaggatag tgacgaaggc aagacctata 180
tctgccgtcg gaagaagaat cgagtagccg gtcgacacaa cggaagcgaa agtgtccgcg 240
atgttgatga gcgtcgccgg ttgtggcggc ggtggcggc 279

<210> 448
<211> 295
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<220>
<221> modified_base
<222> (268)..(269)
<223> a, t, c or g

<400> 448
tactcaagct ttcgtcagtt catcgcgcca gcagaccaac aagagcatcg ggacatacgg 60
agtcaactac ccggccaacg gtgatttctt ggccgccgct gacggcgcga acgacgccag 120
cgaccacatt cagcanatgg ccagcgcgtg ccgggccacg aggttggtgc tcggcggcta 180
ctcccagggt gcggccgtga tcgacatcgt caccgccgca ccactgcccg gcctcgggtt 240
cacgcagccg ttgccgcccg cagcgganna tcacatcgcc gcgatcgccc tgttc 295

<210> 449
<211> 280
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<400> 449
ccacccgtgt aatttgggat gggcnaaaag gcnaagcacc gcgtggccac gaacgccggg 60
agggacaatc tcgggcggct agggcttctc gcgggaaggc ccgaacgtac ggcgtttcaa 120
cacgtcgcgt cgccctccga ccgcgaacat tcggggatgg cagcaacctg gtagcaccct 180
ggccgggcga tgatctgcag cgtcgccgcg ggtagtcgcc gcccgggcgg ctacagtctg 240
aaacgcgatg accatcgatg tgtggatgca gcatccgacg   280

<210> 450
<211> 320
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (37)
<223> a, t, c or g

<220>
<221> modified_base
<222> (57)
<223> a, t, c or g

<220>
<221> modified_base
<222> (67)
<223> a, t, c or g

<220>
<221> modified_base
<222> (87)
<223> a, t, c or g

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (122)
<223> a, t, c or g

<220>
<221> modified_base
<222> (140)
<223> a, t, c or g

<220>
<221> modified_base
<222> (176)
<223> a, t, c or g

<220>
<221> modified_base
<222> (233)
<223> a, t, c or g

<220>
<221> modified_base
<222> (295)
<223> a, t, c or g

<220>
<221> modified_base
<222> (312)
<223> a, t, c or g

<400> 450
tcaagcttta gctgcccgaa tccgtcancc cgatgcnccc agatcggggc ttcgcanata 60
aagcacnaac aggcgggcaa aacgtcnatc tcggagccgg aagggcaatc anccgaccgt 120
cnacaaacga caccggcgan accacttagg cagtgacggc cggcccgaac attacncgct 180
cgttgattag gcgttcggtc tcgtccgcgg tcatgccgag cagcttgcgg canatctgaa 240
cgctgtcctg tccgggcagc ggcgccgggc gttggggtgc ctgcggaatg tgacnaaacg 300
gagccggacc cntctcggcg 320

<210> 451
<211> 203
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (22)
<223> a, t, c or g

<220>
<221> modified_base
<222> (28)..(29)
<223> a, t, c or g

<220>
<221> modified_base
<222> (35)
<223> a, t, c or g

<220>
<221> modified_base
<222> (68)
<223> a, t, c or g

<220>
<221> modified_base
<222> (167)
<223> a, t, c or g

```
<220>
<221> modified_base
<222> (173)
<223> a, t, c or g

<400> 451
ccggggccac tccgcacaat cngtaccnna ccaanatcta caccatcgaa tacgacggcg 60
tcgccgantt tccgcggtac ccgctcaact ttgtgtcgac cctcaacgcc attgccggca 120
cctactacgt gcactccaac tacttcatcc tgacgccgga acaaatngac gcntcggttc 180
cgctgaccaa tacggtcggt ccc                                        203


<210> 452
<211> 287
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (130)
<223> a, t, c or g

<220>
<221> modified_base
<222> (193)
<223> a, t, c or g

<220>
<221> modified_base
<222> (236)
<223> a, t, c or g

<220>
<221> modified_base
<222> (244)
<223> a, t, c or g

<400> 452
nctggccttt ggtccacact aanacaatac tcaagcttcc ggccgcagag ccgccaactc 60
acgatatcgt taaccgatat cccgagccga tagctggcgg gctcgggtgg tggccagcgg 120
cgctgcgacn aaaggtgtga ccgtcatgaa acagacacca ccggcggccg tcggccgtcg 180
tcacctgctc ganatctcag catccgcagc cggtgtgatc gcgctttcgg cgtgtngtgg 240
gtcnccgccc gagcccggca aaggccggcc cgacacaacc ccggaac              287


<210> 453
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<400> 453
catctgccca ccacacggac cgcggtgcgg acgcggctga cgcgcctggt ggtcagcatc 60
```

```
gtggccggtc tgctgttgta tgccagcttc ccgccgcgca actgctggtg ggcggcggtg 120
gttgcgctcg cattgctggc ctgggtgctg acccaccgcg cgacgacacc ggtgggtggg 180
ctgggctacg gcctgctatt cggcctggtg ttctacgtct cgttgttgcc gtggatcggc 240
gagctggtgg gccccgggcc ctggttggca ct                                272
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<210> 454
<211> 364
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (103)
<223> a, t, c or g

<220>
<221> modified_base
<222> (127)
<223> a, t, c or g

<220>
<221> modified_base
<222> (257)
<223> a, t, c or g

<220>
<221> modified_base
<222> (279)
<223> a, t, c or g

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<220>
<221> modified_base
<222> (319)
<223> a, t, c or g

<220>
<221> modified_base
<222> (321)
<223> a, t, c or g

<220>
<221> modified_base
<222> (324)
<223> a, t, c or g

<220>
<221> modified_base
<222> (351)
<223> a, t, c or g

<400> 454
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gacaatactc aagcttgact ggccacccac cggcatgacc accgacaggc ccgactggtc 60
gtaccactcg aacgccgggg tgttgatgtc ccagccgctg aantcgtcct gcgcgcgcag 120
gccgtcnaac aggtacaggg cgggcgaatt ggcaccacca ctttggaatt ggaccttgat 180
gtcacggccc atcgacggcg acggcacctg caggtactcc accggcaagc ccggccggga 240
aaatgccccc gcggtcnccg tgccaccgac ggcgccganc aaacccgaca ctagggccgc 300
gccnacggcc ccgaccacna ntcnacgcga catacccgtg acggcgccac naaccctgtc 360
```

<210> 455
<211> 360
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (50)
<223> a, t, c or g

<220>
<221> modified_base
<222> (153)
<223> a, t, c or g

<220>
<221> modified_base
<222> (272)
<223> a, t, c or g

<220>
<221> modified_base
<222> (329)
<223> a, t, c or g

<400> 455
cctccaactc ggcggggaag cgacnccagc ctaccgagct tggagtccan gacgccagcg 60
gcggcgtcgg tctgcgtcgt ggtgccgccg gggtggcgtt ggctggcaac gatctccacc 120
cagccggtcg ggttacccac gatctcggca tanacgcggg ccgaggccgg tgcgataccg 180
tattgcgtca attgggacgc ggttgtgcat tcggctagct cggttgccac acccgtcagg 240
ggttcgacgt tggcgggttc ggcgggcccc ancaccgctg tcaccatgcc cgccaagccg 300
acctgcggcg ccaccaactg cagcaccanc atgtcgccgt cgcgcgccgc gatcacatgg 360

<210> 456
<211> 311
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<220>
<221> modified_base
<222> (51)
<223> a, t, c or g

<220>
<221> modified_base
<222> (58)
<223> a, t, c or g

<220>

<221> modified_base
<222> (85)
<223> a, t, c or g

<220>
<221> modified_base
<222> (99)
<223> a, t, c or g

<220>
<221> modified_base
<222> (127)
<223> a, t, c or g

<220>
<221> modified_base
<222> (242)
<223> a, t, c or g

<220>
<221> modified_base
<222> (277)
<223> a, t, c or g

<400> 456
ctcaagcttt ttgagcgtcg cgcggggcan cttcgccggc aattctacta ncgagaantc 60
tggcccgata cggatctgac cgaantcgct gcggtgcanc ccaccctcat tggcgatggc 120
gccgacnatg gcgcctggac cgatcttgtg ccgcttgccg acggcgacgc ggtaggtggt 180
caagtccggt ctacgcttgg gcctttgcgg acggtcccga cgctggtcgc ggttgcgccg 240
cnaaagcggc gggtcgggtg ccatcaggaa tgcctcnccg ccgcggcact gcacggccag 300
tgccgcggcg a   311

<210> 457
<211> 288
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<400> 457
cnccagcttg attggtctgg ttgcattggc cagctgcgcg agcctggctc acttcaacta 60
cgacgaccgc aaacaattgc cgccttcgga tccgagttcg gttgggtacg cggcaatgga 120
gcaccatttc tcggtgaatc agactattcc tgagtacttg atcatccact ctgcacacga 180
cctgcgaacc ccgcgcggcc ttgccgacct ggagcagctg gcgcaacgtg tgagccagat 240
cccaggcgtt gccatggttc gcggtgtgac ccggccaaac ggggaaac   288

<210> 458
<211> 256
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (66)
<223> a, t, c or g

<220>
<221> modified_base

<222> (206)
<223> a, t, c or g

<220>
<221> modified_base
<222> (240)
<223> a, t, c or g

<400> 458
caatactcaa gcttgactgg gcccgcacct tcggcgccac ccacaccgtc aacgcccgcg 60
aagtcnacgt cgtccaggcc atcggcggcc tcacggatgg attcggcgcg gacgtggtga 120
tcgacgccgt cggccgaccg gaaacctacc agcaggcctt ctacgcccgc gatctcgccg 180
gaaccgttgt gctggtgggt gttccnacgc ccgacatgcg cctggacatg ccgctggtcn 240
acttcttctc tcacgg 256

<210> 459
<211> 327
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (166)
<223> a, t, c or g

<220>
<221> modified_base
<222> (169)
<223> a, t, c or g

<220>
<221> modified_base
<222> (173)
<223> a, t, c or g

<220>
<221> modified_base
<222> (175)
<223> a, t, c or g

<220>
<221> modified_base
<222> (219)
<223> a, t, c or g

<220>
<221> modified_base
<222> (230)
<223> a, t, c or g

<220>
<221> modified_base
<222> (307)
<223> a, t, c or g

<400> 459
tcgacggttt ggcggcctta aatgcactga ggtcgtcaat tgaccccaca gcggaaatgc 60
cgactattcg caggcctcct tcgccttggc tgccggagag gggctccgcg ggaaccgcat 120
gcaggtatat gacctcggtt tctcgggtgc taccgcgtgc cttgtntang atnanctcgg 180
cgttggaatt gtccagccgg cccaattcat cgagcgcana ttcgtacacn tggccggcgg 240
cgacatacgc ttcaccgtgg atctgctcca cacggaccgc cctgtcggga tcctgctcac 300
gggtaangga acttacgtgg cactcgg 327

<210> 460
<211> 100
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (41)
<223> a, t, c or g

<400> 460
gaccacgcca ggctaatcac gtgacgctac cgaataccct ncctagtggt gcaggctccc 60
gctggaaatg gccctgtacc aactcgcgca ccggtgccag   100

<210> 461
<211> 114
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (114)
<223> a, t, c or g

<400> 461
cggcacccga ccccttgag ccgtccgccg tggccgcggt ggaactggcc gacgagggac 60
tgatcgtgct gggcaaattg gtcgatggca cgctggccgc cgatctgaag gtcn   114

<210> 462
<211> 287
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<220>
<221> modified_base
<222> (177)..(178)
<223> a, t, c or g

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

<220>
<221> modified_base
<222> (267)
<223> a, t, c or g

<400> 462
ctcaagcttg ccgttacccc gacttccgga gggacaccat gagcaccgcc agccgagcac 60
gaggccaaac tccgccgacg caggccggtt ggacttgtcg tgctggacaa ggggtttagc 120
cgccgaagca gtgacgtaca tcggcgaaaa gcagttcgcc tgtcgaccga cggngcnnac 180
cgtgaggcta gggaagcgag gagcacatgg ccgccgaccc gcaatgtaca cgctgcaagc 240
aaaccatcga acccggatgg ctatncntca ccgcccatcg ccgcggt   287

<210> 463
<211> 288
<212> DNA
<213> Mycobacterium tuberculosis

<400> 463
catgtcgcgc acatccagga cttctggggg gatccgctga cagcggcggg atcccaaagt 60
gcggatgatc gggccgccta cgtcgtggtg tacctcgtcg gtaacaacga aaccgaagcg 120
tatgactcgg tccacgcggt gcggcacatg gtggacacca caccgccacc gcacggggtg 180
aaggcctatg tcaccggtcc ggcagcactc aatgccgacc aggccgaggc cggagacaaa 240
agtatcgcta aggtcaccgc gatcacgagc atggtgatcg cagcaatg 288

<210> 464
<211> 255
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (78)
<223> a, t, c or g

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<400> 464
atactcaagc ttcggtacgg tggcgggccg tgctgctggc cgcggtcgcg gcgtgcgcgg 60
cctgcggtct cgtttacnag ctcgcgctgc tgacactggc ggcnagcctg aacggcggcg 120
ggatcgtggc cacctccctg atcgtcgcgg gctacatagc cgcgctggga gcaggcgcct 180
tgctgatcaa gccgctactt gcacacgcgg ccatcgcgtt catcgccgtg gaggcggtgc 240
tgggcatcat cggcg 255

<210> 465
<211> 288
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (22)
<223> a, t, c or g

<400> 465
tgtcaagtcc tttcagatct cnttttatg acatgactgg agatctgtct agattgcagc 60
tcctgtgagc gtgggtaccg gattcaagcc ggtcggtcac gccgcggtgg taccggcttt 120
gcggcagtgc tcggcctcga gttcggcgat cgcgcgcgaa gtgcgttcgc gcagcaagat 180
cgcggccgta atgccggcga tgaccgcgat gaccagcgcg atccaggaga accgttccaa 240
ccagtgctgg gcggccatcc cggcgaagta gaccagtgca gtggtgcc 288

<210> 466
<211> 224
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<222> (73)
<223> a, t, c or g

<220>
<221> modified_base
<222> (129)
<223> a, t, c or g

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<400> 466
caatactcaa gcttcaaaac aggcctgttg tgggcgcacc cggctcgccg agttctgcac 60
gcaccgcctc aantgcggcc cgcaccgccg gcatctcccg gtcacgcagg gccgcggccc 120
gcgccgcanc gacggngtgt tcgcgcagtt cgccgtcaat gatgctgacc tgatcggcca 180
cccgggcgtt ctcggcgtcg tcncgttcac taatcgcggt gctc 224

<210> 467
<211> 320
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (24)..(25)
<223> a, t, c or g

<400> 467
tacgctggcg ctggagggag ccanntacaa catccacgcc aatgctcttg ccccgatcgc 60
ggcgaccagg atgacccagg acatcctgcc gcccgaagta ctggaaaagc tcacacccga 120
gttcgtcgca ccggtggtgg cctacctgtg caccgaggag tgtgccgaca acgcatcggt 180
gtacgtcgtc ggtggtggca aggtgcagcg agttgcgctg tttggcaacg acggcgccaa 240
cttcgacaaa ccgccgtcgg tacaagatgt tgcggcgcgg tgggccgaga tcaccgatct 300
gtccggtgcg aaaattgctg 320

<210> 468
<211> 303
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (17)..(18)
<223> a, t, c or g

<220>
<221> modified_base
<222> (45)
<223> a, t, c or g

<220>
<221> modified_base
<222> (103)
<223> a, t, c or g

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<220>
<221> modified_base
<222> (163)
<223> a, t, c or g

<220>
<221> modified_base
<222> (171)..(173)
<223> a, t, c or g

<220>
<221> modified_base
<222> (226)
<223> a, t, c or g

<220>
<221> modified_base
<222> (295)
<223> a, t, c or g

<400> 468
gcttttcccg tccgtcnncg ctcaaccgcg tgaggccgaa gcggntggtt acgactccct 60
gtttgtgatg gaccacttct accaactgcc catgttgggg acncccgacc agccgatgct 120
ggaggcctac acggcccttg gtgcgctggc cacggcgacc gancggctgc nnntgggcgc 180
gttggtgacc ggcaatacct accgcagccc gaccctgctg gcaaanatca tcaccacgct 240
cgacgtggtt agcgccggtc gagcgatcct cggcattgga gccggttggt ttganctgga 300
aca                                                                 303


<210> 469
<211> 391
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<220>
<221> modified_base
<222> (12)
<223> a, t, c or g

<220>
<221> modified_base
<222> (29)
<223> a, t, c or g

<400> 469
cngcttttta atggccttga cntgggcgng ccggccaccg gggccactcc gcacaatctg 60
tacccgacca agatctacac catcgaatac gacggcgtcg ccgactttcc gcggtacccg 120
ctcaactttg tgtcgaccct caacgccatt gccggcacct actacgtgca ctccaactac 180
ttcatcctga cgccggaaca aattgacgca gcggttccgc tgaccaatac ggtcggtccc 240
acgatgaccc agtactacat cattcgcacg gagaacctgc cgctgctaga gccactgcga 300
tcggtgccga tcgtggggaa cccactggcg aacctggttc aaccaaactt gaaggtgatt 360
gttaacctgg gctacggcga cccggcctat g                                  391


<210> 470
<211> 343
<212> DNA
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<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (48)
<223> a, t, c or g

<220>
<221> modified_base
<222> (77)
<223> a, t, c or g

<220>
<221> modified_base
<222> (269)
<223> a, t, c or g

<220>
<221> modified_base
<222> (275)
<223> a, t, c or g

<220>
<221> modified_base
<222> (311)
<223> a, t, c or g

<400> 470
ctcaagcttg ccgggagggt gcatggccga ctcggattta cccaccangg ggcgccaacg 60
cggtgtccgc gccgtcnagc tgaacgttgc tgcccgcctg gagaacctgg cgctgctgcg 120
caccctggtc ggcgccatcg gcaccttcga ggacctggat ttcgacgccg tggccgacct 180
gaggttggcg gtggacgagg tgtgcacccg gttgattcgc tcggccttgc cggatgccac 240
cctgcgcctg gtggtcgatc cgcgaaaana cgaanttgtg gtggaggctt ctgctgcctg 300
cgacacccac nacgtggtgg caccgggcag ctttagctgg cat 343

<210> 471
<211> 303
<212> DNA
<213> Mycobacterium tuberculosis

<400> 471
ccgacgccgt cgtggccacc aacaccgcga ccagcaccgt gacccggacc ggggtgccgc 60
gcgaaccggt cttggccaat tgccgcggca ccaagccgtc gcgcgccatg gcgaacagca 120
cgcggcattg cccgagcatc aacaccatca ccaccgtggt aagcccggcc agcgcgccga 180
cggagatgat gccgctggcc cagtacaccc cgttggcctg gaacgcggtg ccagatttg 240
ccggcccgcg gcccggtacg gtccgcagtt gggtgtatgg aaccatgccc gacagcacca 300
ccg 303

<210> 472
<211> 264
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (3)
<223> a, t, c or g

<220>
<221> modified_base
<222> (177)

<223> a, t, c or g

<400> 472
ttnactggcc tttggtccac actagacaat actcaagctt ccaggacatc gtcatcgcga 60
ccaaaaccgc gagctaggtc ggcatccggg aagcatcgcg acaccgtggc gccgagcgcc 120
gctgccggca ggccgattag gcgggcaaat tagcccgccg cggctcccgg ctccgantac 180
ggcgccccga atggcgtcac cggctggtaa ccacgcttgc gcgcctgggc ggcggcctgc 240
cggatcaggt ggtaaatgcc gaca 264

<210> 473
<211> 280
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<400> 473
ngacgtcttc catccgcgcg tcgttttggc gggttggcca cagcagcccg ccggtgacgg 60
cgacgatgct gggctggttg cggccctgcg ccaccgcggc ttgcatgctg gttggctgtc 120
ttgggacgat cccgaaatag tccacgcgga tctggtgatt ttgcgggcta cccgcgatta 180
ccccgcgcgg ctcgacgagt ttttggcctg gactacccgc gtggccaatc tgctgaactc 240
gcggccggtg gtggcctgga atgtcgagcg ccgttaccta 280

<210> 474
<211> 153
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (17)
<223> a, t, c or g

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (52)
<223> a, t, c or g

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (143)
<223> a, t, c or g

<400> 474
cttcctcctg agtaccnccc gtntactttg ggatgggtaa aaaggcgaat cnccgtttgg 60
tcacgaacgc cgggagggac aatctcgggc ggctggggcc tctcgcggga angcccgaat 120
gtacggtgtc tcgacacttc ccntcccccct ccg 153

<210> 475
<211> 247
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (13)
<223> a, t, c or g

<220>
<221> modified_base
<222> (77)
<223> a, t, c or g

<220>
<221> modified_base
<222> (155)
<223> a, t, c or g

<220>
<221> modified_base
<222> (161)
<223> a, t, c or g

<220>
<221> modified_base
<222> (218)
<223> a, t, c or g

<220>
<221> modified_base
<222> (233)
<223> a, t, c or g

<400> 475
gagcatcggg acntacggag tcaactaccc ggccaacggt gatttcttgg ccgccgctga 60
cggcgcgaac gacgccngcg accacattca gcagatggcc agcgcgtgcc gggccacgag 120
gttggtgctc ggcggctact cccagggtgc ggccntgatc nacatcgtca ccgccgcacc 180
actgcccggc ctcgggttca cgcagccgtt gccgcccnca gcggacgatc acntcgccgc 240
gatcgcc 247

<210> 476
<211> 264
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (10)
<223> a, t, c or g

<220>
<221> modified_base
<222> (24)..(25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (123)
<223> a, t, c or g

<220>
<221> modified_base
<222> (262)
<223> a, t, c or g

<400> 476
tactcatgan catcctttaa tcanngcttt gcgttttttt attaaatctt gcaatttact 60
gcaaagcaac aacaaaatcg caaagtcatc aaaaaaccgc aaagttgttt aaaataagag 120
cancactaca aaaggagata agaagagcac atacctcagt cacttattat cactagcgct 180
cgccgcagcc gtgtaaccga gcatagcgag cgaactggcg aggaagcaaa gaagaactgt 240
tctgtcagat agctcttacg cnca 264

<210> 477
<211> 264
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (64)
<223> a, t, c or g

<220>
<221> modified_base
<222> (67)
<223> a, t, c or g

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (135)
<223> a, t, c or g

<220>
<221> modified_base
<222> (137)
<223> a, t, c or g

<220>
<221> modified_base
<222> (176)
<223> a, t, c or g

<220>
<221> modified_base
<222> (178)
<223> a, t, c or g

<220>
<221> modified_base
<222> (184)
<223> a, t, c or g

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<220>
<221> modified_base
<222> (205)
<223> a, t, c or g

<220>
<221> modified_base
<222> (231)
<223> a, t, c or g

<220>
<221> modified_base
<222> (263)
<223> a, t, c or g

<400> 477
ctcaagcttc aggtcaatgt gcnccaagcc ctgacgctgg ccgaccaggc caccgccgcc 60
gganacnctg ccaaggccac cgaatacaac aacgccgccg aggcgttcgc ancccagctg 120
gtgaccgccg agcanancgt caaaaacctc aagacgctgc atgaccaggc gcttancncc 180
gcanctcagg ccaagaaggc cgtcnaacga aatgcgatgg tgctgcacca naagatcgcc 240
gagcgaacca agctgctcag ccng 264


<210> 478
<211> 352
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (62)
<223> a, t, c or g

<400> 478
catggtggca ctgtagcgac gtgctgcaat caaggtcatg cccgactctg gtcagctcgg 60
anccgctgac accccgctaa ggctgctcag ctcggtgcat tacctcaccg acggcgaact 120
cccccagctt tacgactatc cggatgacgg cacctggttg cgggcgaact tcatcatcag 180
cttggacggc ggcgctaccg tcgatggcac cagcggggcg atggccgggc ccggcgaccg 240
attcgtcttc aacctgttgc gtgaacttgc cgacgtcatc gtggtcggcg tgggcaccgt 300
gcgcattgag ggctactccg cgtccggat gggtgtcgtc cagcgccagc ac 352


<210> 479
<211> 207
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (57)
<223> a, t, c or g

<220>
<221> modified_base
<222> (88)
<223> a, t, c or g

<220>
<221> modified_base
<222> (133)
<223> a, t, c or g
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<220>
<221> modified_base
<222> (181)
<223> a, t, c or g

<400> 479
tactcaagct tgcgggtgat cgccttggtc aacggcaccg tgatcggatc ggggtcnacc 60
gcacaaatgg actggagctt cggcgaantc atcgcctatg cctcgcgggg ggtgacgctg 120
accccgggtg acntgttcgg ctcgggcacg gtgcccacct gcacgctcgt ctatcacctc 180
nggccaccgg aatcattccc gggctgg 207

<210> 480
<211> 256
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<400> 480
gttggngcct cgtcggcgaa cagttctcgc acgatttccg gattagcggg actggtcacc 60
agttgggtat gcgggaaggc gctgacgttc gccgcgatta gctgtttgat ggacgcggtg 120
gtgatgttct gatcacggaa ctggctgtaa tagcccaggg tcgccacgct ttcatccggg 180
cccggacccg gcgcaccgag cgtgtcgcgc aggtatgcga cgtgattttc gctgaagtcc 240
ccgtacccgg agaact 256

<210> 481
<211> 397
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (34)
<223> a, t, c or g

<400> 481
tgcttccggc tcgtatgttg tgtggaattg tgancggata acaatttcac acaggaaaca 60
gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc aagctccagg 120
tcaatgtgcg ccaagccctg acgctggccg accaggccac cgccgccgga gacgctgcct 180
ttgtcaccga atacaacaac gccgccgagg cgttcgcagc ccagctggtg accgccgagc 240
agagcgtcga agacctcaag acgctgcatg accaggcgct tagcgccgca gctcaggcca 300
agaatgccgt cgaacgaaat gcgatggtgc tgcggcataa gatcgccgag cgaaccaagc 360
tgctcagcca gctcgagcag gcgaagatgc acgagca 397

<210> 482
<211> 379
<212> DNA
<213> Mycobacterium tuberculosis

<400> 482
caggcatgca agcttcggag gcagacccgt gcatggtggc actgtagcga cgtgctgcaa 60
tcaaggtcat gcccgactct ggtcagctcg gagccgctga caccccgcta aggctgctca 120
gctcggtgca ttacctcacc gacggcgaac tcccccagct ttacgactat ccggatgacg 180
gcacctggtt gcgggcgaac ttcatcagca gcttggacgg cggcgctacc gtcgatggca 240
ccagcggggc gatggccggg cccggcgacc gattcgtctt caacctgttg cgtgaacttg 300
ccgacgtcat cgtggtcggc gtgggcaccg tgcgcattga aggctactcc ggcgtccgga 360
tgggtgtcgt ccatcgcca 379

<210> 483
<211> 264
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (125)
<223> a, t, c or g

<220>
<221> modified_base
<222> (216)
<223> a, t, c or g

<220>
<221> modified_base
<222> (230)
<223> a, t, c or g

<220>
<221> modified_base
<222> (244)
<223> a, t, c or g

<400> 483
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tactcaagct tggggtggcg ctgtcggtcg gtgtgcttgg cggcgtcggt atcaacaccg  60
cccacgaaat ggggcacaag aaggattcgc tggagcggtg gctgtccaaa atcaccctcg 120
cccanacctg ctacgggcac ttctacatcg agcacaaccg tggccatcac gtccgggtgt 180
ccacaccgga ggacccggcg tcggcgcggt tcggcnaaac gttgtgggan ttcctgcccc 240
gcantgttat cggcggcttg cgct                                        264
```

<210> 484
<211> 351
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (16)
<223> a, t, c or g

<220>
<221> modified_base
<222> (256)
<223> a, t, c or g

<400> 484
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ggccatcgcc accgcnccgc ggcgaacgct caaaggcacc tactggcacc aaggccccac  60
acgtcaccct gtgacctcct gcgccgaccc cgcccgaggt cctggccgtt accaccgaac 120
gggcgagccg ggagtctggt acgcatcgaa caaagagcaa ggtgcatggg cggagttgtt 180
ccgccacttc gtcgatgacg gggtcgatcc attcgaggtc cgtcgccgcg tcggtcgagt 240
ggcggtcaca ctccangtac tcgacctcac agacgagagg actcgatccc atctaggtgt 300
ggacgaaaca gatcttctgt ccgacgacta caccaccacc caggccatcg c           351
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<210> 485
<211> 328
<212> DNA
<213> Mycobacterium tuberculosis

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<220>
<221> modified_base
<222> (50)
<223> a, t, c or g

<220>
<221> modified_base
<222> (56)
<223> a, t, c or g

<220>
<221> modified_base
<222> (70)
<223> a, t, c or g

<220>
<221> modified_base
<222> (81)
<223> a, t, c or g

<220>
<221> modified_base
<222> (84)
<223> a, t, c or g

<220>
<221> modified_base
<222> (126)
<223> a, t, c or g

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<220>
<221> modified_base
<222> (207)
<223> a, t, c or g

<220>
<221> modified_base
<222> (216)
<223> a, t, c or g

<220>
<221> modified_base
<222> (222)
<223> a, t, c or g

<220>
<221> modified_base
<222> (246)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<220>
<221> modified_base
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<220>
<221> modified_base
<222> (271)
<223> a, t, c or g

<220>
<221> modified_base
<222> (315)
<223> a, t, c or g

<400> 485
gcttgcgggt gatcgccttg gtcaacggca ccgtgatcgg atcggggtcn accgcncaga 60
tggactggan cttcggcgaa ntcntcgcct atgcctcgcg gggggtgacc ctgaccccgg 120
gtgacntgtt cggctcgggc acggtgccca cctgcacgct cgtcaagcac ctcnggccac 180
cggaatcatt cccgggctgg ctgcacnacg gcgacntggt cnccctccag gtcgaagggc 240
tgggcnaaac aangcagacc gtccggacaa ncggcactcc ttttccgttg gctcttcggc 300
cgaatccgga cgccnaaccc gaccggcg 328

<210> 486
<211> 344
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (106)
<223> a, t, c or g

<220>
<221> modified_base
<222> (131)
<223> a, t, c or g

<220>
<221> modified_base
<222> (144)
<223> a, t, c or g

<220>
<221> modified_base
<222> (265)..(266)
<223> a, t, c or g

<220>
<221> modified_base
<222> (309)
<223> a, t, c or g

<400> 486
gttctcgcac gatttccgga ttagcgggac tggtcaccag ttgggtatgc gggaaggcgc 60
tgacgttcgc cgcgattagc tgtttgatgg acgcggtggt gatgtnctga tcacggaact 120
ggctgtaata ncccagggtc gccncgcttt catccgggcc cggaccggc gcaccgagcg 180
tgtcgcgcag gtatgcgacg tgattttcgc tgaagtcccc gtacccggag aactcgaaca 240
cgctgaggcg ctcgtcaccg tcgtnncggc gaccaagcgc ggcgagcaac tgcgcaaaat 300
cgttaagana ggtcgaatcg ttgaaattcg gcaccacctg cacc 344

<210> 487
<211> 285
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<220>
<221> modified_base
<222> (35)
<223> a, t, c or g

<220>
<221> modified_base
<222> (76)
<223> a, t, c or g

<220>
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<222> (147)
<223> a, t, c or g

<220>
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<222> (149)
<223> a, t, c or g

<220>
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<222> (154)
<223> a, t, c or g

<220>
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<222> (188)
<223> a, t, c or g

<220>
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<222> (193)
<223> a, t, c or g

<220>
<221> modified_base
<222> (243)
<223> a, t, c or g

<220>
<221> modified_base
<222> (246)
<223> a, t, c or g

<220>
<221> modified_base
<222> (255)
<223> a, t, c or g

<400> 487
cacaagacaa tactcaagct tcaggtcaat gtgcnccaag ccctgacgct ggccgaccag 60
gccaccgccg ccgganacgc tgccaaggcc accgaataca acaacgccgc cgaggcgttc 120
gcagcccagc tggtgaccgc cgagcananc gtcnaaaacc tcaagacgct gcatgaccag 180
gcgcttancg ccncagctca ggccaagaag gccgtcgaac gaaatgcgat ggtgctgcag 240
canaanatcg ccgancgaac caagctgctc agccagctcg agcag 285

<210> 488
<211> 280
<212> DNA
<213> Mycobacterium tuberculosis

<400> 488
ccacccgtgc atggtggcac tgtagcgacg tgctgcaatc aaggtcatgc ccgactctgg 60

```
tcagctcgga gccgctgaca ccccgctaag gctgctcagc tcggtgcatt acctcaccga 120
cggcgaactc ccccagcttt acgactatcc ggatgacggc acctggttgc gggcgaactt 180
catcagcagc ttggacggcg cgctaccgt cgatggcacc agcggggcga tggccgggcc 240
cggcgaccga ttcgtcttca acctgttgcg tgaacttgcc               280
```

<210> 489
<211> 160
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (18)
<223> a, t, c or g

<220>
<221> modified_base
<222> (117)
<223> a, t, c or g

<220>
<221> modified_base
<222> (137)
<223> a, t, c or g

<220>
<221> modified_base
<222> (148)
<223> a, t, c or g

<400> 489
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gctttccgcc gatacccncc atgtcccgca catccaggac ttctgggggg atccgctgac 60
agcggcggga tcccaaagtg cggatgatcg ggccgcctac gtcgtggtgt acctcgncgg 120
taacaacgaa accgaancgt atgactcngt ccacgcggtg               160
```

<210> 490
<211> 176
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (131)
<223> a, t, c or g

<220>
<221> modified_base
<222> (138)
<223> a, t, c or g

<220>
<221> modified_base
<222> (140)
<223> a, t, c or g

<220>

<221> modified_base
<222> (151)
<223> a, t, c or g

<220>
<221> modified_base
<222> (169)
<223> a, t, c or g

<400> 490
caacccgant tggctttcgg cgccntcggt gaggacggcg tgcgggtgct caacgacgac 60
gtcgtccgcg ggacacacct cgatgctgcc gccatggacg cggtcgaacg caagcagctg 120
atcgatctac nacgccgngn ggaacgcttc ngccgcgggc gtgaccgcnt cccgtt 176

<210> 491
<211> 216
<212> DNA
<213> Mycobacterium tuberculosis

<400> 491
gggatgggca aaaaggcgaa gcaccgcgtg gccacgaacg ccgggaggga caatctcggg 60
cggctagggc ttctcgcggg aaggcccgaa cgtacggcgt ttcaacacgt cgcgtcgccc 120
tccgaccgcg aacattcggg gatggcagca acctggtagc accctggccg ggcgatgatc 180
tgccagcgtc cccgcgggta gtcgccgccc gggcgg 216

<210> 492
<211> 163
<212> DNA
<213> Mycobacterium tuberculosis

<400> 492
cagcagacca acaagagcat cgggacatac ggagtcaact acccggccaa cggtgatttc 60
ttggccgccg ctgacggcgc gaacgacgcc agcgaccaca ttcagcagat ggccagcgcg 120
tgccgggcca cgaggttggt gctcggcggc tactcccacg gtt 163

<210> 493
<211> 80
<212> DNA
<213> Mycobacterium tuberculosis

<400> 493
ctcaagcttg actggccacc caccggcatg accaccgaca ggcccgactg gtcgtaccac 60
tcgaacgccg gggtgtttga 80

<210> 494
<211> 248
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<220>
<221> modified_base
<222> (186)..(189)
<223> a, t, c or g

<400> 494
ttggtgcccg gaatggcgag tcccatttan tcgctgattt gtttgaacag cgacgaaacc 60
ggtgttgaaa atgtcgcctg ggtcggggat tccctctcca agcaagagta actggcccca 120
aataaagtta ctcgtcgtct tgcaaagacc gctacccgat gccatttatg tgtttcctta 180
cgctcnnnnt tccggtgcgc catcattatc tgcacctttg cactgcacat tgagcttagc 240
agcgctcg 248

<210> 495
<211> 341
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<220>
<221> modified_base
<222> (187)
<223> a, t, c or g

<400> 495
gaattngctt tcggcgccat cggcccagga ccgcgtgcgg gtgctcaacg acgacgtcgt 60
ccgcgggaca cacctcgatg ctgccgccat ggacgcggtc gaacgcaagc agctgatcga 120
gctacaacgc cgcgcggaac gcttccgccg cgggcgtgac cgcatcccgt tgaccgggcg 180
gatcgcngtg atcgtcgatg acggcatcgc caccggagcg acggccaagg cggcgtgcca 240
ggtcgcccgg cgcacggtg cggacaaggt ggtgctggcg gtcccgatcg cccagacga 300
catcgtggcg agattcgccg ggtacgccga tgaagtggtg t 341

<210> 496
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (106)
<223> a, t, c or g

<220>
<221> modified_base
<222> (200)
<223> a, t, c or g

<220>
<221> modified_base
<222> (272)
<223> a, t, c or g

<220>

<221> modified_base
<222> (355)
<223> a, t, c or g

<220>
<221> modified_base
<222> (362)
<223> a, t, c or g

<220>
<221> modified_base
<222> (413)
<223> a, t, c or g

<400> 496
taaagctttc gtcagttcat ngngccccccg gaccaacaaa agcatcggga catacggagt 60
caactacccg gccaacggtg atttcttggc cgccgctgac ggcgcnaacg acgccagcga 120
ccacattcag cagatggcca gcgcgtgccg ggccacgagg ttggtgctcg gcggctactc 180
ccagggtgcg gccgtgatcn acatcgtcac cgccgcacca ctgcccggcc tcgggttcac 240
gcagccgttg ccgcccgcag cggacgatca cntcgccgcg atcgccctgt tcgggaatcc 300
ctcgggccgc gctggcgggc tgatgagcgc cctgacccct caattcgggt ccaanaccat 360
cnacctctgc aacaacggcg acccgatttg ttcggacggc aaccggtggc gancgcacct 420

<210> 497
<211> 135
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (16)
<223> a, t, c or g

<220>
<221> modified_base
<222> (26)
<223> a, t, c or g

<220>
<221> modified_base
<222> (50)..(51)
<223> a, t, c or g

<220>
<221> modified_base
<222> (54)..(56)
<223> a, t, c or g

<220>
<221> modified_base
<222> (64)
<223> a, t, c or g

<220>
<221> modified_base
<222> (67)
<223> a, t, c or g

<220>
<221> modified_base
<222> (108)..(109)
<223> a, t, c or g

<220>
<221> modified_base
<222> (113)
<223> a, t, c or g

<220>
<221> modified_base
<222> (119)
<223> a, t, c or g

<220>
<221> modified_base
<222> (127)
<223> a, t, c or g

<400> 497
ccgggaggga ccatcncggg cggctncggc ttctctccgg aaggttctan ngtnnngcgt 60
ttcnacnctt cccgtcgccc tgcgaccgcc gaacattcgg ggtatggnng cancctgtna 120
gcatccnggc cgggc   135

<210> 498
<211> 277
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (103)
<223> a, t, c or g

<220>
<221> modified_base
<222> (254)
<223> a, t, c or g

<400> 498
ctcaagcttc cgcatcagat cgctatagaa ccggtgcgcg tccccaccga gtggctggtc 60
gccttccagc acgatcgtta ccgcgttatc ggaatcaaac tcnccgaaca cctgaccaac 120
gcgcttgatc gcctgaatcg atgcggcgtc gctggggctc atcgataccg agtgtgcttt 180
tccgaccact tccagttgcg gtacggcgag attgacaaag gcggtgaagc ccagccagag 240
caggacgatc accnccgcaa accggcggat ttgcccg   277

<210> 499
<211> 323
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (188)
<223> a, t, c or g

<220>
<221> modified_base
<222> (193)..(194)

<223> a, t, c or g

<220>
<221> modified_base
<222> (311)
<223> a, t, c or g

<220>
<221> modified_base
<222> (323)
<223> a, t, c or g

<400> 499
gcttggcagc ctgcggctgg gcgccctnga gctcttcgat ctggatctcc ggactcgaga 60
tgctcacttg cccggccgtg gacgtaccca ttgcggccgg gaccccagcg ccccaggtga 120
ccagcgagtt gggctgcacg ctgaccggcc cgtcggggtc gacgccggta acggtcagca 180
gctccgangt ccnnctgatc ccgaccgcag ctgccaatgc gcggctggca gccgacgtgg 240
atgtgccggg gcctagatcg cggggcagca gcgagaccgc gtcaccgacg gtcatcacct 300
tgccgagttt nggcctgccg can 323

<210> 500
<211> 148
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (46)
<223> a, t, c or g

<400> 500
gcttccggct cgtatgttgt gtggaattgt gagcggataa caattncaca caggaaacag 60
ctatgaccat gattacgcca agctatctag gtgacactat agaatactca agcttgagcc 120
atcgggctat cagctggttg atgtcccg 148

<210> 501
<211> 242
<212> DNA
<213> Mycobacterium tuberculosis

<400> 501
caggcatgca agcttgtcgt ctatcacatc cgaccaccaa ccgcccgacg gctcggcaga 60
acgcctccgc atatgggtcg acgaccagcg ggtcggactt ctgggctgcc agcgctcgcg 120
ccgtcgcgac aaacagcgcg gtcgaaccga cactccttgt gatgtcccac ctatcacctt 180
cggtacgcac ccaatcgacc ctacgcggct agctcagccc cgatcttcca gagctccgcc 240
cg 242

<210> 502
<211> 230
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (122)
<223> a, t, c or g

<400> 502
gctttttgag cgtcgcgcgg ggcggcttcc ccggcaattc tactagcgag aagtctggcc 60
cgatacggat ctgaccgaag tcgctgcggt gcagcccacc ctcattggcg atggcgccga 120

```
cnatggcgcc tggaccgatc ttgtgccgct tgccgacggc gacgcggtag gtggtcaatt 180
ccggtctacg cttgggcctt tgcggacggt cccgacgctg gtcgcggttg        230
```

<210> 503
<211> 235
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (4)
<223> a, t, c or g

<220>
<221> modified_base
<222> (36)
<223> a, t, c or g

<400> 503
```
cgancctgtt cgacggctac ctgaatcacc ccgatnccac cgccgcggcg ttcgacgccg 60
acagctggta ccgcaccggc gacgtcgcgg tggtcgacgg cagtgggatg caccgcatcg 120
tgggacgcga gtcggtcgac ttgatcaagt cgggtggata ccgggtcggc gccggtgaaa 180
ttgaaacggt gctgctcggg catccggacg tggcggaggc ggcagtcgtc ggggt    235
```

<210> 504
<211> 152
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (26)
<223> a, t, c or g

<220>
<221> modified_base
<222> (32)
<223> a, t, c or g

<400> 504
```
naagctttgt cacaccaagt gtttcnacca gncgctccat ccggcgaagt ggatactccc 60
agcaggtagc aggtcgccac cacgctggtc agtgcgcgtt cagctcgctt gcggcgctgc 120
agcagccagt ccgggaaata gctgccctgg cg                           152
```

<210> 505
<211> 192
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (7)
<223> a, t, c or g

<400> 505

```
cgctggncgc cggcgctggg ctgcggtaac caattaccac aacactttc ggtagccgaa 60
cagcggcgcg taccagcgaa atggcacagc caccgcagtc gccgacatcc cgcgaagatg 120
tggcagattt tcgtgcggtc gagccggcga aggcctagcg tcattgttgc ctggcaaggt 180
tgctgggccc gg                                                      192
```

<210> 506
<211> 312
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (34)
<223> a, t, c or g

<220>
<221> modified_base
<222> (142)
<223> a, t, c or g

<220>
<221> modified_base
<222> (166)
<223> a, t, c or g

<220>
<221> modified_base
<222> (169)
<223> a, t, c or g

<220>
<221> modified_base
<222> (189)
<223> a, t, c or g

<400> 506
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ctcaagcttc ttctgcccct tgccgttncg gatnacatcc cgcagcgact cggcttcggc 60
gtcgatgtcg aagttctcga tcagcttctg gatcgactcc gcgcccatgg caccggtgaa 120
gtactcgccg tagcggtcga cnagttcgcg gtagaggttt tcgtcnacna tcagctgctt 180
gggcgccanc ttggtgaaag tgctccaaat gtcctccaac cggtccagct cacgctgcgc 240
gcggtcacgg atctggcgca tctcgcgctc gccgccgtcg cgaacttgcg ccgcgcatcg 300
gccttggggc cc                                                      312
```

<210> 507
<211> 296
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (30)

<223> a, t, c or g

<220>
<221> modified_base
<222> (184)
<223> a, t, c or g

<220>
<221> modified_base
<222> (186)
<223> a, t, c or g

<220>
<221> modified_base
<222> (189)
<223> a, t, c or g

<220>
<221> modified_base
<222> (275)
<223> a, t, c or g

<400> 507
gttcacacct acctactatg ccncaattcn ccgacacggg tggcatcaac acgggcgata 60
aggtggaaat cgctggggtg aacgtcgggc tggtgcgctc gctggcaatc cgcggcaacc 120
gcgtgttgat cggattctcg ttgcccggca agacaatcgg gatgcaaagc cgggcagcaa 180
ttcncnccna caccattctt ggccgtaaga acctggagat cgaaccccgc ggttcggagc 240
cgttgaaacc caacggtttc ctgccgttgg cgcanaccac tacgccatac caaatc 296

<210> 508
<211> 208
<212> DNA
<213> Mycobacterium tuberculosis

<400> 508
ctcaagcttt acgccgacgc cggcctacac aacaccaagg aaacgattgc ctactgccga 60
atcggggaac ggtcctcgca cacctggttc gtgttgcggg aattactcgg acaccaaaac 120
gtcaagaact acgacggcag ttggacagaa tacggctccc tggtgggcgc cccgatcgag 180
ttgggaagct gatatgtgct ctggaccc 208

<210> 509
<211> 278
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (5)
<223> a, t, c or g

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<400> 509
tcccncatgg gataacgggt ttagatttcn acaacggcac cgtgtttctc aacaagccgg 60
tcatcagctg ggccggcgac aacggtatct acttcacccg ctttcgcccg tacaagaaaa 120
accactaggc caccatcgag tccaagaaca accacctggt ccgcaagtac gcgttctact 180
accgctatga caccgccgag gaacgcgccg tgctcaaccg gatgtggaag ctggtcaacg 240
accgcctcaa ctacctcacc ccgaccatca aaccgatc 278

<210> 510
<211> 177
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (34)
<223> a, t, c or g

<220>
<221> modified_base
<222> (158)
<223> a, t, c or g

<220>
<221> modified_base
<222> (166)
<223> a, t, c or g

<400> 510
ctcaagcttg ggtgttgccg atcaccggaa gccncatgat cagccacgtt tcgcgccgcc 60
cggcatacgg cggcgtaccg atctccgcgt catacacccg cgggtaatcg ccgacggtgc 120
cggttcgcga gccgaaggtg acaacgctga ttgaatcnag ttccangtcc agcgggt   177

<210> 511
<211> 296
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<220>
<221> modified_base
<222> (184)..(187)
<223> a, t, c or g

<220>
<221> modified_base
<222> (206)
<223> a, t, c or g

<220>
<221> modified_base
<222> (226)
<223> a, t, c or g

<220>
<221> modified_base
<222> (250)
<223> a, t, c or g

```
<220>
<221> modified_base
<222> (283)
<223> a, t, c or g

<400> 511
tnaacagctc gcggcagccc acgacctgct gcgtcggatt gccggcggcg agatcaattc 60
caggcagctc ccggacaatg cggctctgct ggcccgcaac gaangactcg aggtcacccc 120
ggtgcccggg gtcgtggtgc acctgccgat cgcacaggtt ggcccacaac cggccgcttg 180
atgnnnngtc ggcaagcccg gcagtngcca aacccagcgt gatcangctc ggctcgcgag 240
ttcggcgaan aagtggctcg cctgatcacc taccatcggc cangatctgc gtgtca      296
```

```
<210> 512
<211> 223
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (5)
<223> a, t, c or g

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<220>
<221> modified_base
<222> (145)
<223> a, t, c or g

<220>
<221> modified_base
<222> (148)
<223> a, t, c or g

<220>
<221> modified_base
<222> (160)
<223> a, t, c or g

<220>
<221> modified_base
<222> (223)
<223> a, t, c or g

<400> 512
gccanccggc ttggcgtcga ctcccgttcn gcacatcata cggtccccgg tactgtccaa 60
ctgcgccggt gcgctagcca aacgtcacga ctctcagtga tcccagttcg tgatccggcc 120
ggtggcgccg ctgcggcggg ggctnatnta cttcggactn attatctcat ccaaaggaca 180
ccgggccggt ggctggaatc ccatggtgcg atcggccaca can                    223
```

```
<210> 513
<211> 147
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (103)
```

<223> a, t, c or g

<400> 513
ccgacctggt atcttccgat agcgcgcgtt gatatccggt ctgatctcct gcccttaacg 60
ccggatctca gcaggtcccc atgcaaagat ccgaggtgtc ccngatctag gggtcctcgt 120
cctccagatg atggagcaag tcggccc 147

<210> 514
<211> 149
<212> DNA
<213> Mycobacterium tuberculosis

<400> 514
ctcaagcttc ggctcaggcg gcgctgccgg taacgtcgct gaccggtgca ggtttcgaca 60
atgtggtgcc ggttcggcgg ctacgtgcca tcaagacact ggcgcaggct atcgcacccg 120
ttatcggcta caaacaaatc gcggtatgc 149

<210> 515
<211> 238
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (10)
<223> a, t, c or g

<400> 515
catcacctgn ttcatgaact ggaagcaccg cagcgcttcc ttttcggccg caacatgagc 60
cagcctctcg tcggcggtcg ggtgcaggtg ctcgggcagc tcggccgcga cagccgcctg 120
accctgaaac cagcttccat atcccgcgac gaacgacgcc agtccgctac gtaacccctc 180
cgcgactgtc catggacaac agcgcgttct ccaccgaccg ggcccgggtg tggggtgt 238

<210> 516
<211> 175
<212> DNA
<213> Mycobacterium tuberculosis

<400> 516
agcttagctt cccgccccgg caatagggct ccagctcatc cggtgtgacc agatagggc 60
ccagggtgat accgctgtct ttgcccttgg cctgtccgat gcgcagctgg ccctccagca 120
tctgcaggtc ccgtgcggac cagtcgttga aaatggtata gccgatgatc gaccg 175

<210> 517
<211> 144
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (3)
<223> a, t, c or g

<220>
<221> modified_base
<222> (16)
<223> a, t, c or g

<400> 517

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ccngaacaga agcggnggtt cctaccgcgg tgtgcggccg gcgcgatatc ggccttttta 60
ctaaccgaac ccgatgtggg ctccgatccg gcgcgcatgg catcgacggc gacgccgatc 120
gatgaccgcc aggcttacca cctt                                       144
```

<210> 518
<211> 174
<212> DNA
<213> Mycobacterium tuberculosis

<400> 518
```
ctcaagcttg cgcgactcga caagcattct tgacagttgt tttggctcgg catggttagc 60
caaggttctg cggtcccacc agatcatctt ggtccggtag cgctcgtccg ggtatgctgc 120
cgccgggatt ctcgctgcta ttactccccc cgaagaacgc caccggtcca gcgc        174
```

<210> 519
<211> 187
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (3)
<223> a, t, c or g

<400> 519
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gtgttgctgg ggattctcac gctgctgctg agtgcgtgcc agaccgcttc cgcttcgggt 120
tacaacgagc cgcggggcta cgatcgtgcg acgctgaagt tggtgttctc catggacttg 180
gggatgt                                                          187
```

<210> 520
<211> 215
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (45)
<223> a, t, c or g

<400> 520
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gtgtggaacc gtgagcggat aacaatttca cacaggaaac agctntgacc ttgattacgc 60
caagctattt aggtgaggct atattaatac tcaagattgc ggtcgagcac atcggcccaa 120
gaaccgccga aggcacggcg gaacgcctgc ggcacatggg gcgacgacca gcgggtcgga 180
cttctgggct gtccagccgg atcgcgccgt cgcga                           215
```

<210> 521
<211> 406
<212> DNA
<213> Mycobacterium tuberculosis

<400> 521
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cactgtcagt acatatgcgc cgctcctcct catcgctgcg ctcggcatcg tcgccggcgg 60
tcatggcgtc accctaccca agccgaacgc gaaacgagaa cgtgttccat tattagggtg 120
tgagcaccaa taccagattg ctcaccagga actcacgcag caccgggacg gatgtcagcc 180
accacgccca tctggggtgg tagcggggaa atacggctaa cgcggctccg gtgccggcag 240
cccagcgcag accctcggcg gcggacacgg caaacaacga cgaccatag ttgttctttg 300
ccggatggcc gtgtttgcgg acatatcggg cggcggcgcg ggcgccgccg aggtagtggc 360
tgaggcccat ctcgtgcccg ccgaatggcc ccagccaaac cgtgta              406
```
```
Page 204
```

<210> 522
<211> 180
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (86)
<223> a, t, c or g

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<400> 522
ctcaagcttt tacggtgatc gcgcatcacc tggttcatga actggaagca gcgcagcgct 60
tccttttcgg ccgcaacatg agccancctc tcgtcggcgg tcgggtgcag gtgctcgggc 120
agctcggccg cgacagccgc ctgaccctga aaccagcttc catatcccgc gacnaacgac 180

<210> 523
<211> 69
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (47)
<223> a, t, c or g

<400> 523
ctcagaagcc gctagctggt agagtcgctg accggtgcac gtggcgncaa tgtgcgctgc 60
cggttcgcg 69

<210> 524
<211> 168
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (111)
<223> a, t, c or g

<220>
<221> modified_base
<222> (114)
<223> a, t, c or g

<220>
<221> modified_base
<222> (157)
<223> a, t, c or g

<400> 524
ctcaagcttg cgctcatcaa gcgcgaacag cagggcggtc ggctggtcgc catgacgggt 60
gacgggacca atgacgcacc cgcgctcgcg caagccgatg tcggggtggc natnaatacc 120
ggcacccagg cggcccggga agccggcaac atggtcnatc tccactcc 168

<210> 525
<211> 83
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (73)
<223> a, t, c or g

<400> 525
acttctattt cgactggtgt gctgtggcgc gatccgactg ccggcgtggt caaggccggc 60
cagttgtggg atnccacagg cac   83

<210> 526
<211> 173
<212> DNA
<213> Mycobacterium tuberculosis

<400> 526
gcttgtcgta ttccgtggca ctgtcagaca tatgcgccgc tcctcctcat cgctgcgctc 60
ggcatcgtcg ccggcggtca tggcgtcacc ctacccaagc cgaacgcgaa acgagaacgt 120
gttccattat tagggtgtga gcaccaatac cagattgctc accaggaact cac   173

<210> 527
<211> 38
<212> DNA
<213> Mycobacterium tuberculosis

<400> 527
cgatattcgt cggccgcgtt gtctcgactg ggtcgcgt   38

<210> 528
<211> 136
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (96)
<223> a, t, c or g

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<400> 528
gacctcggcc accaagccgg acgcgaccgt cgaggtggcg atccggcttg gcgtcgaccc 60
gcgtaaggca gaccacatgg tccgcggcac ggccancctg ccacacggca ctggtaagac 120
tgcccgcgtc gcggcn   136

<210> 529
<211> 114
<212> DNA
<213> Mycobacterium tuberculosis

<400> 529

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ccggaagtct aggggacgac ctactcagcg caaaatgtcg ctaatgtgag tccgccccac 60
cagggcagat caacccatgt cgatgatgac ctaccggat accggattgg cggt        114
```

<210> 530
<211> 119
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (91)
<223> a, t, c or g

<400> 530
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agcttcagtt cctccacgac gcgttcccaa atgaatttcc cgatcccaca atctcggttc 60
agatacaggt cgccataccc cttacttcgg naacgctggg cggattggcc ctgccgctg  119
```

<210> 531
<211> 99
<212> DNA
<213> Mycobacterium tuberculosis

<400> 531
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ccgcctacgg gtcgaacatg catcccgaga ccgatgctcg agcgcgcacc ccactcgccg 60
atggccggaa ccggctggtt acccgggtgg cggctgacc                        99
```

<210> 532
<211> 308
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (141)
<223> a, t, c or g

<220>
<221> modified_base
<222> (147)
<223> a, t, c or g

<220>
<221> modified_base
<222> (308)
<223> a, t, c or g

<400> 532
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gcggctggtt acgactccct gtttgtgatg gaccacttct accaactgcc catgttgggg 60
acgcccgacc agccgatgct ggaggcctac acggcccttg gtgcgctggc cacggcgacc 120
gagcggctgc aactgggcgc nttggtnacc ggcaatacct accgcagccc gaccctgctg 180
gcaaagatca tcaccacgct cgacgtggtt agcgccggtc gagcgatcct cggcattgga 240
gccggttggt ttgagctgga acaccgccag ctcggcttcg agttcggcac tttcagtgac 300
cggttcan                                                          308
```

<210> 533
<211> 328
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<220>
<221> modified_base
<222> (187)..(188)
<223> a, t, c or g

<400> 533
gcctttccgc acaatctgta ccccaggacc ntctaaaaaa tcgaatacga cggcgtcgcc 60
gactttccgc ggtacccgct caactttgtg tcgaccctca acgccattgc cggcacctac 120
tacgtgcact ccaactactt catcctgacg ccggaacaaa ttgacgcagc ggttccgctg 180
accantnntg tcggtcccac gatgacccag tactacatca ttcgcacgga gaacctgccg 240
ctgctagagc cactgcgatc ggtgccgatc gtggggaacc cactggcgaa cctggttcaa 300
ccaaacttga aggtgattgt taacctgg 328

<210> 534
<211> 75
<212> DNA
<213> Mycobacterium tuberculosis

<400> 534
gcagaccaac aaagatgcatc gggatcatac gccgtcaact acccggccaa cggtgatttc 60
ttggccgccg cccac 75

<210> 535
<211> 319
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (35)
<223> a, t, c or g

<220>
<221> modified_base
<222> (49)
<223> a, t, c or g

<220>
<221> modified_base
<222> (88)
<223> a, t, c or g

<220>
<221> modified_base
<222> (93)
<223> a, t, c or g

<220>
<221> modified_base
<222> (135)
<223> a, t, c or g

<220>
<221> modified_base
<222> (228)
<223> a, t, c or g

<220>
<221> modified_base
<222> (299)
<223> a, t, c or g

<400> 535
ctcaagcttg ccaaagagac ctcgtccacc aagcnggacg cgaccgtcna ggtggcgatc 60
cggcttggcg tccacccgcg taaggcanac canatggttc gcggcacggt caacctgcca 120
cacggcactg gtaanactgc ccgcgtcgcg gtattcgcgg ttggtgaaaa ggccgatgct 180
gccgttgccg cgggggcgga tgttgtcggg agtgacaatc tgatcganag gattcagggc 240
ggctggctgg aattcgatgc cgcgatcgcg acaccggatc agatggccaa agtcggtcnc 300
atcgctcggg tgctgggtc 319

<210> 536
<211> 312
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<400> 536
ccacggcgtg gatcaaggta ccggccggga tgttgcgcaa tggcaggttg ttgcccggct 60
tgatgtcggc gttagcgccg gattccacca catccccttg cgaaagtccg ttgggtgcaa 120
tgatgtagcg cttctcccca tcgagatagt ggagcaacgc aatccgtgcg gtacggttcg 180
ggtcntactc gatgtgcgcg accttggcgt tgacaccatc tttgtcattg cggcgaaagt 240
cgatcatccg gtaagcgcgc ttatgaccgc cgcctttgtg ccgggtggta atccggccat 300
gcgcgttgcg tc 312

<210> 537
<211> 105
<212> DNA
<213> Mycobacterium tuberculosis

<400> 537
ggcggctgcg tcggcgagat gatcgcccgg tgccaccccg atccgtgcct cggtcagcgc 60
caacgtgctt tccggtccgg cgaccaccat gtcgcatgcg ccgac 105

<210> 538
<211> 144
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (43)
<223> a, t, c or g

<220>
<221> modified_base
<222> (47)
<223> a, t, c or g

<220>
<221> modified_base
<222> (60)
<223> a, t, c or g

<220>
<221> modified_base
<222> (75)
<223> a, t, c or g

<220>
<221> modified_base
<222> (134)
<223> a, t, c or g

<220>
<221> modified_base
<222> (141)
<223> a, t, c or g

<400> 538
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cggcgcattt cgtcnaatcg ttcccgtatg cccaccttga cgatgtcctt catatggacc 120
acgccgatgg cccncgcgct nctg 144

<210> 539
<211> 431
<212> DNA
<213> Mycobacterium tuberculosis

<400> 539
ccggctcgta tgttgtgtgg aattgtgagc ggataacaat ttcacacagg aaacagctat 60
gaccatgatt acgccaagct atttaggtga cactatagaa tactcaagct tccacatcgg 120
tatgccaaag cattgcgccg ctatcgattt cgcgctggca tcgccaaggt ggacttcttg 180
ctcagcgacg agatcccgtg gtcggatccg cggctgcggc gggctgcggg acgccacgcc 240
ggcggcaccc gtgaccagat ggcgcgcgcc gaggcagacg tcgcggcggg acgccacgcc 300
gactggccga tggtgctggc cgcgtgtccg cacgtcgccg accccggccg catcgacgaa 360
accggccgcc gtccgttctg gacctatgcc cacgtgccgt cggggtccac gctcgacgcg 420
accgagaccg t 431

<210> 540
<211> 462
<212> DNA
<213> Mycobacterium tuberculosis

<400> 540
cgcgtccacc gcagcgtgag attggtggcg ccattcgtcg tggtgtagct gctgttggcg 60
gcgtcgccgt attgtgcggg ccagccttgt gcggggccg cttctaccca cgagtcggca 120
cttccgcaac cgcccagctc gaccgcgatt acggcggccg caacggccgc cggaaggcgt 180
ctcgcaagcg ccttatcctt tcgcaggttc ccagatcctt ccgctacgtg ggtcgctcat 240
cggcgggccc ggccgaatga gtacaggtga gggtaaccgc tacaaatgaa gttggtcagt 300
gctggccaac tgtgtaatgg ttgcccggct cgggtcacca cgtacattct ggcaaggcgg 360
gcgagattcg gttcctcgcg tccttggccg gtggcggttc ccggttgtcc gtgggcgtgt 420
cgtgtacgtg gtgtaagtgt cgtgaactcc tcagtttggg ct 462

<210> 541
<211> 307
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (206)
<223> a, t, c or g

<220>
<221> modified_base
<222> (212)
<223> a, t, c or g

<220>
<221> modified_base
<222> (298)
<223> a, t, c or g

<400> 541
ctcaagcttg cgctggatct ggcggctgag cctgttcttg ggcaacatgc cgagggatcg 60
ccttttccac cacgcggtcg gggtggcgtt gcattagctc accgatggtg cgcttgtgca 120
ggccgccggg ataccccgag tgccggtaaa ccatcttgtg ctgcagtttg tcgccgctga 180
tggcgacctt gtcggcgttg atcacnatga cnaagtcacc gccatcgaca ttggggcga 240
acgtcggctt gtgcttgccg cgcagcaggt tggccgccgc gacggcaagg cggccaanca 300
ccacgtc 307

<210> 542
<211> 333
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (26)
<223> a, t, c or g

<400> 542
tttgggatgg gcaaaaaggc gaagcnccgc gtggccacga acgccgggag ggacaatctc 60
gggcggctag ggcttctcgc gggaaggccc gaacgtacgg cgtttcaaca cgtcgcgtcg 120
ccctccgacc gcgaacattc ggggatggca gcaacctggt agcaccctgg ccgggcgatg 180
atctgcagcg tcgccgcggg tagtcgccgc ccgggcggct acagtctgaa acgcgatgac 240
catcgatgtg tggatgcagc atccgacgca acggttccta cacggcgata tgttcgcctc 300
gctgcgccgg tggaccggtg ggtctatccc gga 333

<210> 543
<211> 234
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (48)
<223> a, t, c or g

<220>
<221> modified_base
<222> (161)
<223> a, t, c or g

<220>
<221> modified_base
<222> (193)
<223> a, t, c or g

<220>
<221> modified_base
<222> (198)
<223> a, t, c or g

<220>
<221> modified_base
<222> (200)
<223> a, t, c or g

<220>
<221> modified_base
<222> (221)
<223> a, t, c or g

<400> 543
ctcaagcttc gtcataagac catggtgcgc tttctttcac ccgtccanag tcgggggcat 60
ccgcaccggc tcgcatcgca tcatcctccc acgacgggcc gctcatcagc ttgggccatt 120
tcaatgtact tgataccccg cgctgcgggt aggccactgc nacaattcaa acacggtgtc 180
acacggtgaa tantgtcnan atgggctctg atcaaccgtc ncaaacccgg tttc 234

<210> 544
<211> 440
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (427)
<223> a, t, c or g

<400> 544
gaattctgcg tgcaccgcta tgggttgcag cagcggctgg cgccgcacac cccactggcc 60
cgggtgtttt cgccccgaac ccggatcatg gtgagcgaaa aggagattcg cctgttcgat 120
gctgggattc gccaccgcga ggccatcgac cgattactcg ccaccggggt gcgagaggtg 180
ccgcagtccc gctccgtcga cgtctccgac gatccatccg gcttccgccg tcgggtggcg 240
gtagccgtcg atgaaatcgc tgccggccgc taccacaagg tgattctgtc ccgttgtgtc 300
gaagtgcctt tcgcgatcga ctttccgttg acctaccggc tggggcgtct gcacaacacc 360
ccggtgaggt cgttttttgtt gcagttgggc ggaatccgtg ctctgggtta cagccccgaa 420
ctcgtcncgg cggtgcgcgc 440

<210> 545
<211> 425
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<220>
<221> modified_base
<222> (57)
<223> a, t, c or g

<220>
<221> modified_base
<222> (111)
<223> a, t, c or g

<220>
<221> modified_base
<222> (180)
<223> a, t, c or g

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<220>
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<222> (197)
<223> a, t, c or g

<220>
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<222> (288)
<223> a, t, c or g

<220>
<221> modified_base
<222> (356)
<223> a, t, c or g

<220>
<221> modified_base
<222> (359)
<223> a, t, c or g

<220>
<221> modified_base
<222> (385)
<223> a, t, c or g

<220>
<221> modified_base
<222> (402)
<223> a, t, c or g

<400> 545
gcagttggga atcgctctgc agcaaaccan tattctgcgc gacgttcgag aggactnttt 60
gaatggacgg atctacctgc cgcgcgacga gctggaccga ttaggcgtac ncctccgcct 120
ggacgactcc ggggcactcg atgaccccga cggacggctc gcggcactgc tgcggttcan 180
tgccnaccgc gccgcanact ggtattcgct gggactgcgg ctgattccac acctcgaccg 240
ccgcagcgct gcctgctgtg cggccatgtc tggcatctac cgccgtcngc tcgccttgat 300
cagaccatcg ccggcggtcg tctaccatcg gcgaatctct ctgttcggga ctgaanaang 360
cccaagtggc ggcggcagca ctggnctctt cggtaacctg cngaccgccc attggaccgc 420
taccg   425

<210> 546
<211> 401
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<220>

<221> modified_base
<222> (71)
<223> a, t, c or g

<220>
<221> modified_base
<222> (93)
<223> a, t, c or g

<220>
<221> modified_base
<222> (188)
<223> a, t, c or g

<220>
<221> modified_base
<222> (325)
<223> a, t, c or g

<400> 546
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ttgatctgga cgtctgagac ggtgatcggn ccgaacctga attgtccggt aatgcccagc 60
gcagaaagca nggtggtggc cggggcggtg aanccggcgt cggcggcacc gtcgaagtcg 120
atgtggattg ccggaatggg gatgtccggc acggcgaagc cgtagttcgc ttgtcccgtg 180
aggcccangt ggatggggggg aaggatcgtg gtgtccggga tgataatggg gccgatgccg 240
ccggttgaag tccagtggat cgggaattcg ggaatcgtga tgccgacgtt caggccgaac 300
aggccctcca agttgcctcg ccacnagatg ccgttgctga agttgcccga catgagggcg 360
ccggtgtcca cattgcccga attggcgacg ccggtgttgg c                      401
```

<210> 547
<211> 391
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (52)
<223> a, t, c or g

<220>
<221> modified_base
<222> (91)
<223> a, t, c or g

<220>
<221> modified_base
<222> (163)
<223> a, t, c or g

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

<220>
<221> modified_base
<222> (301)
<223> a, t, c or g

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<400> 547
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ggcgagcagg tcaaccgggc gctgcccgtc naggagccgg tttttggcgt gcagccactg 120
gccgacacct cggggggtaa gcgaatccga gagcaggagg acnaggtcac gaanctgcgc 180
cagccggtcg taccgctcag ggcggatgtc gccggtccgc cacccgcgta ccgcccgatc 240
ggacacctgt atgaccgcgg cgacntcgac ctgggtgacg ccgaagggtt tcagggcatc 300
nacnatctcg ctggcctcga ccgcccggtc cagggtgacc gccatcgtgg ttcctccgca 360
acttccggtt ctactaccgt aaacgctacc g 391

<210> 548
<211> 369
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (52)
<223> a, t, c or g

<220>
<221> modified_base
<222> (80)
<223> a, t, c or g

<220>
<221> modified_base
<222> (89)
<223> a, t, c or g

<220>
<221> modified_base
<222> (266)
<223> a, t, c or g

<220>
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<222> (356)
<223> a, t, c or g

<400> 548
cggggaacgg tcctcgcaca cctggttcgt gttgcgggaa ttactcggac ancaaaacgt 60
caagaactac gacggcagtn ggacagaana cggctccctg gtgggcgccc cgatcgagtt 120
gggaagctga tatgtgctct ggacccaagc aaggactgac attgccggcc agcgtcgacc 180
tggaaaaaga aacggtgatc accggccgcg tagtggacgg tgacggccag gccgtgggcg 240
gcgcgtttcg tgcggctgct gggacncctc cgacgagttc accgccggga ggtcgtcgcg 300
tcggccaccg ggcgaatttc cggttcttcg ccgcgccccg ggatcctggg accgcnggcg 360
cgcgctgtt 369

<210> 549
<211> 85

<212> DNA
<213> Mycobacterium tuberculosis

<400> 549
ctcaagcttt gtccgacaag cgttcccggg cggtcagcaa gcgaacgtcg gttggcccac 60
tgcgggtcga tattgccgcc aggga   85

<210> 550
<211> 101
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (22)
<223> a, t, c or g

<400> 550
cgtcagcacg gcgacgtcgc gntacgccga gcagttacac aatcgctctg cagcaaacca 60
atattctgcg cgacgttcga gaggacttct tgattggact g   101

<210> 551
<211> 458
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (181)
<223> a, t, c or g

<400> 551
ctgcatccgg ctcgtatgtt gtgtggaatt gtgagcggat aacaatttca cacaggaaac 60
agctatgacc atgattacgc caagctattt aggtgacact atagaatact caagcttcgc 120
gcagcggcgg gttgacccgg ttcacgccgt catagctggc caatctggca tcgtcgatca 180
ncatgtggtg gggggtgacc tcggcggtga tcgaaatacc ctggtcctta tcccatttca 240
ggatttcgac ggtgcccgcg gccgacgcgt gacagatgtg cacccggccg ccggcgtcac 300
gggccagcaa ggcgtcgcgg gcgacgatcg attcctcggc ggcccgcggc catcccgcca 360
ggcccagccg cgccgccatg ggtccctcgt gcgcgacggc gccgaccgtc agccggggct 420
cctcggcgtg ctgggcgatc agcacgccca aaccggtg   458

<210> 552
<211> 463
<212> DNA
<213> Mycobacterium tuberculosis

<400> 552
ccgacgcgca ctacgtgctg gtgtccaccc gcgacccgca ccggcacgag ctacgcagct 60
accgcatcgt cgatggcgct gtcaccgagg aacctgtcaa tgtcgtcgag cagtactgaa 120
ccgttccgag aaaggccagc atgaacgtca ccgtatccat tccgaccatc ctgcggcccc 180
acaccggcgg ccagaagagt gtctcggcca gcggcgatac cttgggtgcc gtcatcagcg 240
acctggaggc cagctattcg ggcatttccg agcgcctgat ggacccgtct tccggcggta 300
agttgcaccg cttcgtgaac atctacgtca acgacgaaga cgtgcggttc tccggcggct 360
tggccaccgc gatcgctgac ggtgactcgg tcaccatcct ccccgccgtg gccggtgggt 420
gagcggacac atgacacgat acgactcact gttgcatgcc ttg   463

<210> 553
<211> 453
<212> DNA

<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (306)
<223> a, t, c or g

<400> 553
tgcttccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac acaggaaaca 60
gctatgacca tgattacgcc aagctatttta ggtgacacta tagaatactc aagcttgccg 120
ggagggtgca tggccgactc ggatttaccc accaaggggc gccaacgcgg tgtccgcgcc 180
gtcgagctga acgttgctgc ccgcctggag aacctggcgc tgctgcgcac cctggtcggc 240
gccatcggca ccttcgagga cctggatttc gacgccgtgg ccgacctgag gttggcggtg 300
gacgangtgt gcacccggtt gattcgctcg gccttgccgg atgccaccct gcgcctggtg 360
gtcgatccgc gaaaagacga agttgtggtg gaggcttctg ctgcctgcga cacccacgac 420
gtggtggcac gggcagcttt agctggcatt cct 453

<210> 554
<211> 466
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (11)
<223> a, t, c or g

<400> 554
ggaaacaccg ncgccgtcgt ggccaccaac accgcgacca gcaccgtgac ccggaccggg 60
gtgccgcgcg aaccggtctt ggccaattgc cgcggcacca agccgtcgcg cgccatggcg 120
aacagcacgc ggcattgccc gagcatcaac accatcacca ccgtggtaag cccggccagc 180
gcgccgacgg agatgatgcc gctggcccag tacaccccgt tggcctggaa cgcggtggcc 240
agatttgccg gcccgcggcc cggtacggtc cgcagttggg tgtatggaac catgcccgac 300
agcaccaccg ataccgcgac gtagagaagg gtcacgaccc ccagcgacgc gagaatccct 360
cgagggacgt ctcgttgagg acgcttggtc tcctcggcca tggtggccac gatgtcaaac 420
ccgataaacg cgaagaacac gatcgatgcc cggccagcac gccgta 466

<210> 555
<211> 466
<212> DNA
<213> Mycobacterium tuberculosis

<400> 555
cctgcttccg gctcgtatgt tgtgtggaat tgtgagcgga taacaatttc acacaggaaa 60
cagctatgac catgattacg ccaagctatt taggtgacac tatagaatac tcaagcttgt 120
cctcgggcgt ggcctcggcc aagaaatcgt cgacgccggc ctcctgtgca atcgccttgg 180
cggtcgccgg gttgtcaccg gtgatcatca cggtgcggat gctcattcgg cgcatttcgt 240
cgaagcgttc ccgtatgccc accttgacga tgtccttcag atggacgacg ccgatggccc 300
gcgcgctgct gttatcggtc cattccgcaa cgactagggg tgtcccccg ccggagctga 360
tgccgtcgac aatggcaccc acctcctcag tggggtggcc accgtgatcg caaaaccact 420
tcatcaccgc agccgcggca ccttgcggat ccgaacggat gcgctc 466

<210> 556
<211> 467
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (383)

<223> a, t, c or g

<220>
<221> modified_base
<222> (427)
<223> a, t, c or g

<400> 556
ttcgttcgat ggcgccgccc cggctacggt ttgacctgtg ggtgtcgaat tggggtcaaa 60
ttccgaggtc ggcgcgctaa gagtggtcat cctgcaccgc ccggggggccg aactgcgccg 120
gctcacaccg cgcaacaccg accagctgct gttcgacggc ctgccctggg tatcccgcgc 180
gcatgacgag cacgacgaat tcgccgagct gctggcttcc cgcggtgcgg aagtgctgtt 240
gctgtcggac ctgttgactg aggcactaca tcacagcggg gccgcccgca tgcaggggat 300
cgccgctgcc gtcgacgcac cgcggctggg actgccgctg gcgcaagaac tttcggccta 360
cctgcgtatc tcgacccaag cangttggcg catgtgctga cgccggcatg acttcaacga 420
actcccntcc gacacgccga acgaagtgtc gttggtgttg cgtatgc 467

<210> 557
<211> 142
<212> DNA
<213> Mycobacterium tuberculosis

<400> 557
gcggcgagtg tggtgggtgc cgaacacgaa tccaacgacg cactggcgga gagataccac 60
ttgctgtact ggaagcacgt gctgatgatc tcccgtggaa tgtgcctcgc cgccgtctat 120
cgaaaacagt gagcatgctg cg 142

<210> 558
<211> 217
<212> DNA
<213> Mycobacterium tuberculosis

<400> 558
caaccgcgct cggcgcgtct gggccttccg ccggctccgc cgacaattct atctctggat 60
cagcggggct ctccgggccg gcctccgcga actcaacagg ccgcgccttc cggccgaaac 120
attccctagc catatatgat cgcacctcga tacacgatct ggcggcaaca ccgcaaagcg 180
tccgacgggc ccaacctccg caattcaggt atccggg 217

<210> 559
<211> 147
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<400> 559
gaaggtcggc gaaggtgtgg ctggntgccg atcacgaatc caatgatgca gtggtcggaa 60
gatattagcc acttgctgtt ctggagacag gtgctgatga tctcccgtgg aatgtccctc 120
gactccgtct atcgaaatct gtgaaca 147

<210> 560
<211> 177
<212> DNA
<213> Mycobacterium tuberculosis

<220>

<221> modified_base
<222> (76)
<223> a, t, c or g

<220>
<221> modified_base
<222> (89)
<223> a, t, c or g

<400> 560
tcctgcgctc tgggccattc tcgggtctgc cgacaattct atctctggat ctgtggggct 60
ctcttggccg gcctcngcga tctcttcang gcgcgccttc cggccgaaac attccctatc 120
catatatgat cgcacctcta tacaccgttt ggcggcaaca ccgcaaagtg tctgtcg 177

<210> 561
<211> 128
<212> DNA
<213> Mycobacterium tuberculosis

<400> 561
agctttacgc tggcgtatca gcgttggggc cgctgccatt tcggtcgccc aacgcgttgc 60
cagctccctg cgctgtcagg gcttgcgcgc caaactggcc accgcaacaa acttggctga 120
gcttgatc 128

<210> 562
<211> 142
<212> DNA
<213> Mycobacterium tuberculosis

<400> 562
ctctatctgg cgtcacattc gcaatcttta gattgcagat atcgataaaa tcacccgcgc 60
gacaagaccg ccatgtcatc ctttcgatgt tatttcgccg gcctggggaa agcgcaacga 120
cgttgcctac acgttccgcc gt 142

<210> 563
<211> 406
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (7)
<223> a, t, c or g

<220>
<221> modified_base
<222> (343)
<223> a, t, c or g

<400> 563
agctttncct tgcatctgca ccccgatcca cgtcagccac gtcggcgttc tccaccaaga 60
agttgcgggc attctccttg ccctggccga gctgctcgcc ctcgtaggtg aaccaggcac 120
ccgacttgcg gatgaggccc tgatccacac ccatgtcgat cagcgagccc tccctgctga 180
ttcccttgcc gtagaggatg tcgaactcgg cctgcttgaa ggggggcgaa cagttgtgca 240
cgacaacccc ttcggcgacg agggtgtgca gttcctcgac ctcgaggtcg aacgttcgtg 300
cccgccgcgt tggcagcact tctcggatca cggaatagcg ganttcttcc gccagcatgt 360
cgtgcaggaa tttgtcatcc agggcatccg cgagcgcctg cacgcg 406

<210> 564

<211> 311
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (7)
<223> a, t, c or g

<220>
<221> modified_base
<222> (62)
<223> a, t, c or g

<400> 564
actgtcnagg gaatgcttcg cagcatctac ctgcagtcgc ttgtgcataa gcggacggcc 60
cnacctgttc gtgttccggg acaccagacg cgggagcacc ggcagtacgg cgaaaggttt 120
gagcggaagg agttgcgcaa atcggggcgc cccaacaccc gtccgcaaga cgcggtcaac 180
gacctgtttc aggcgatcag ggtcaccgac tcacctgcac tgagaacaag cgatctgctg 240
atctgccaga agatggacat gaatgtccac ggcaagcctg atggcctgcc gctcttccgg 300
gaatgtttgg c 311

<210> 565
<211> 310
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<220>
<221> modified_base
<222> (44)
<223> a, t, c or g

<220>
<221> modified_base
<222> (69)
<223> a, t, c or g

<220>
<221> modified_base
<222> (71)
<223> a, t, c or g

<220>
<221> modified_base
<222> (212)
<223> a, t, c or g

<220>
<221> modified_base
<222> (257)
<223> a, t, c or g

<220>
<221> modified_base
<222> (298)
<223> a, t, c or g

<400> 565
tgaattatga tcccgacaca actgcatcan tttagccgcg tcgngatgct atccgccgac 60
ggtttgganc nggtccgtgt cgttcgtgtt gatctcaccc gaagttgtgt ccgccgccgc 120
cggggatcta gcgaacgtgg gatcgacaat cagcgccgcc aacaaggcgg cagcggctgc 180
gaccacgcag gtgctggccg cgggcgccga tnaggtgtca gcgcgcatcg cggcgctgtt 240
tggtatgtac ggcctgnaat atccggcgat cagtgcgcaa gttgccgcgt atcaccanca 300
gtccgtgcag 310

<210> 566
<211> 326
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (11)
<223> a, t, c or g

<220>
<221> modified_base
<222> (27)
<223> a, t, c or g

<400> 566
aacggggacc ncaagaaacc attcaanaac gaggggtcgt caccaacgtc gaaaccgacg 60
gttgccagcc ggcccacgat attgcgtgct cgagggtccg ctgtaccctc accgaacgtg 120
agtcccacac cgcggaggcg ggcgactctg gcgtcgttag cagccgagct caaggtgtcc 180
cgcaccactg tctcgaatgc ttttaaccga ccggatcagc tctccgccga tctacgtgaa 240
cgagtgcttg ccacggccaa gcgactgggc tatgccggac cggatccggt ggcgcgatcg 300
ttgcggaccc gcaaagccgg tgcggt 326

<210> 567
<211> 374
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (13)
<223> a, t, c or g

<220>
<221> modified_base
<222> (15)
<223> a, t, c or g

<220>
<221> modified_base
<222> (20)
<223> a, t, c or g

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (93)
<223> a, t, c or g

<220>
<221> modified_base
<222> (205)
<223> a, t, c or g

<220>
<221> modified_base
<222> (262)
<223> a, t, c or g

<220>
<221> modified_base
<222> (268)
<223> a, t, c or g

<220>
<221> modified_base
<222> (275)
<223> a, t, c or g

<220>
<221> modified_base
<222> (327)
<223> a, t, c or g

<400> 567
agctttggag ccncnccgan ccnccggtac gccccgccac cgccgtaccc ggcacccgac 60
ccctttgagc cgttcgccgt ggccgcggtg ganctggccg acgagggact gatcgtgctg 120
ggcaaagtgg tcgatggcac gctggccgcc gatctgaagg tcggcatgga gatggagctg 180
acgaccatgc cgctgttcgc cgacnacgac ggtgtgcagc gcatcgtcta cgcgtggcgg 240
atcccatcgc gcgccggcga cnatgcanag cgcancgatg ctgaggagcg cgccgatga 300
ggatgagcgc gccggaaccc gtttacntcc tgggtgccgg tatgcacccg tggggggaaat 360
ggggtaatga cttc   374

<210> 568
<211> 422
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<220>
<221> modified_base
<222> (20)..(21)
<223> a, t, c or g

<400> 568
ttctcncatc gttcgtactn ngatgggacg ctgctgcccg aggcgatcct ggccaaccgg 60
ctctcgccgg cgctgacctt cggcggggcg aacctgaact tctttccgat gggcgcttgg 120
gccaaacgta ccggggctat cttcattcgg cgtcagacga aagatattcc cgtctaccgc 180
ttcgtattac gtgcttacgc cgcgcagctg gtgcaaaacc atgtcaacct cacctggtcg 240
atcgaagggg gtcggaccag aacgggcaag ctacggccac cggtgttcgg gatcctgcgt 300
tacatcaccg atgcggtcga cgaaatcgac ggtcccgaag tgtatttggt gccgacctcg 360
atcgtgtacg aacagctgca cgaagtggaa gccatgacca ccgaagccta tggcgccgtg 420
aa   422

<210> 569
<211> 300

<212> DNA
<213> Mycobacterium tuberculosis

<400> 569
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ttcttccggg taccgctgat cggcggcacc atcacgcacc cggtgcaggg cgaggcggcc 60
gccggtgtgg tgttgctacg gccggccagc ccgggtaccg gtgtgatcgc cggtggtgcg 120
gcccgcgcgg tgctggaatg tgcgggggtg cacgacatct tggccaagtc gctgggcagt 180
gacaacgcga tcaatgtggt gcacgccacc gtggccgcgc tcaagctgct gcaccgtccg 240
gaggaggtgg cggcgcgccg cggtttgcca atagaagacg tccccccggc cgggatgctg 300
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<210> 570
<211> 343
<212> DNA
<213> Mycobacterium tuberculosis

<400> 570
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gtcgaaagtg accatctcta ccttgagtgc cataccgccc gaccctatgc ctcggatagc 60
tcggcggaaa gaaacgcttg cagtgccgcc gaataggcgg ctacgtcgtg agcgcccatc 120
aactctcgcg cggagtgcat cgccagctgg gcggcgccga cgtcgaccgt ggggattccg 180
gtgcgcgccg cggccaacgg cccgatcgtc gacccgcacg gcagatcggc gcgatgttcg 240
taacgctgca taggcactcc cgcgcgctgg caggccagtt gcgaaacgcc cccgccgggt 300
gccttccgtc ggttggcttt accgcaaatt tggggttgcc cct                    343
```

<210> 571
<211> 220
<212> DNA
<213> Mycobacterium tuberculosis

<400> 571
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aaagccacgg aaacgattgc ctactgccga atcggggaac ggtcctcgca cacctggttc 60
gtgttgcggg aattactcgg acaccaaaac gtcaagaact acgacggcag ttggacagaa 120
tacggctccc tggtgggcgc cccgatcgag ttgggaaact gatatgtgct ctggacccaa 180
gcaaggactg acattgccgg ccagcgtcta cctggaaaaa                        220
```

<210> 572
<211> 254
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (13)
<223> a, t, c or g

<220>
<221> modified_base
<222> (234)
<223> a, t, c or g

<400> 572
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tttcgccacc gcnaggtcgt gcgcgttcca gaaaagcgtg gtttcgccgg gcgcgaggat 60
tcgacggtcc aactgaccag ccggtcccgc cacccgttag gcaggatcgc ggtgtctata 120
tgttcgccct cggcataaac gccattgctg cggtgaaaat cggacatctc gccgattgcc 180
acgtctacat gatccgcttt gtcccgcgcc gggtcgttga caaacgcgat gtcngcctcc 240
tgggaagcgg tggc                                                    254
```

<210> 573
<211> 329
<212> DNA

<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (49)
<223> a, t, c or g

<220>
<221> modified_base
<222> (169)
<223> a, t, c or g

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<220>
<221> modified_base
<222> (192)
<223> a, t, c or g

<220>
<221> modified_base
<222> (235)
<223> a, t, c or g

<220>
<221> modified_base
<222> (262)
<223> a, t, c or g

<220>
<221> modified_base
<222> (283)
<223> a, t, c or g

<400> 573
tcgccaagtg gattcgtgct caccnacgag atccgtggtc ggatccgcng ctgcggcggg 60
ctgcgaccct gcatctcggc ggcacccgtg accaaatggc gcgcgccgaa gcagacgtct 120
cggcgggacg ccacgccgac tggccgatgg tgctggccgc gtgtccgcnc gtcnccgacc 180
ccggccgcat cnaccaaacc ggccgccgtc cgttctggac ctatcccacg tgccntcggg 240
gtccacgctc gacgcgaccg anaacgtaac cagcgtcctc gancggttcg cccccggctt 300
ccgtgacatc gtggtggcgg ccgcgccgt 329

<210> 574
<211> 297
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (92)
<223> a, t, c or g

<220>
<221> modified_base

<222> (95)
<223> a, t, c or g

<220>
<221> modified_base
<222> (99)
<223> a, t, c or g

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<220>
<221> modified_base
<222> (107)
<223> a, t, c or g

<220>
<221> modified_base
<222> (140)
<223> a, t, c or g

<220>
<221> modified_base
<222> (165)
<223> a, t, c or g

<220>
<221> modified_base
<222> (177)
<223> a, t, c or g

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<220>
<221> modified_base
<222> (241)
<223> a, t, c or g

<220>
<221> modified_base
<222> (257)
<223> a, t, c or g

<400> 574
gtaccgtcac catgatcgcc cccatcggca tcggtgagct gatagatccc agccggtttc 60
gccaacccccg gagcgatctt ggcgcgctgc tngtngtcnc tganacntag ccaccaacag 120
agcccggtgt gcgacaagan gactgatcgg atctctccgg acacntcgag ggggtcntca 180
ggagnccggg cgccacccccg aggtaagcct ccgcccagcc tcacaccgcg accgggtatc 240
ncaagtcgcg caataanccc accacctcct cggaccccac gttgtatgcg ctgggt   297

<210> 575
<211> 401
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<222> (280)
<223> a, t, c or g

<220>
<221> modified_base
<222> (356)
<223> a, t, c or g

<400> 575
atactcaagc ttagacctca ctgatgtggc gggacgcggg agataaccgc ggttcgagcc 60
gttcaacagt ggtggttccc acaccagttg tttgcctttg cgaagtaaag cgattcgatt 120
tgctcgaaaa gagggctggc tgctcgtgag ggacatccat ggccgatacc tcagcgatct 180
caacggtcaa gcgactgcat gtttggcgca aggtatcgct aagcataggt tcgtgacgga 240
tttgacagca agagctttcc aaagattgct gtccacatan tgattcgcat ctctacacct 300
cttcgccggt gctgtcaaga gccattcgaa tcagttatct cgctcgtgct tggaanaaat 360
tttcccagcc tgcgttggac aaaccgcgtc gccaaagcgg t 401

<210> 576
<211> 453
<212> DNA
<213> Mycobacterium tuberculosis

<400> 576
agcttcccga gaaacagtgc attccctaag cagcccgttg tcacgccgat gagtgaagag 60
tgcacgcaat cgccggaatc cggcaaagcc ctgcacaagc gaaatcaacc cggaggctga 120
caaggcaacg tcggtgatcc gtaccgcctg gttggacaaa cggcagaagg cggcctcgtc 180
cggtccatct acgccagca cactggtgat agcgcgcatc ggcatcggtg cggccacggt 240
ggagacgacg tccgcgggcg tctgggtcag taacccgccg accagttctc gggcaagctg 300
gtcgaccatc gggcgccacg tctccaacgc gccacgcgcc atacctggtg ccagttgctt 360
gcgcatccgg gtgtgcgccg gcggatcgga cgtcgcagaa acgcagccac cccgtgagaa 420
gtgacccacg gcgctggaca cgtgtctggt tac 453

<210> 577
<211> 474
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (106)
<223> a, t, c or g

<220>
<221> modified_base
<222> (261)
<223> a, t, c or g

<220>
<221> modified_base
<222> (323)
<223> a, t, c or g

<400> 577
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ttccaccaca tccccttgcg aaagtccgtt gggtgcaatg atgtancgct tctccccatc 120
gagatagtgg agcaacgcaa tccgtgcggt acggttcggg tcgtactcga tgtgcgcgac 180
cttggcgttg acaccatctt tgtcatggcg gcgaaagtcg atcatccggt aagcgcgctt 240
atgaccgccg cctttgtgcc nggtggtaat ccggccatgc gcgttgcgtc caccgcgacc 300
gtgcagcggg cgcaccagcg acntctccgg ggttgaccgg gtgatctcgg cgaaatcaga 360
tacgctggcg ccgcgacgac caggcgtcgt gggcttgtac ttgcgaattg ccatggtcta 420
atcaggtctt tctctcacct ctcgtcgccg ggctagggcg cattgcctgc tcct 474

<210> 578
<211> 357
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (289)
<223> a, t, c or g

<400> 578
tagcggtgta accaactccc gggtcaccac ccgcaaacct cttgcggcaa cagcaccgtc 60
gacgcgtcaa ccgggctgcc cggaatcctg tggatgggca tcgagtgcat ggtcacgacg 120
tccccgacgc ggccggtggc aacgacaagt ggcccggatg caccacaaat gacggccgca 180
caccggtggg gacggccagc acgagagccg tgtcgccgaa gtcgacgcta atgccgtagg 240
cattggccgt cacaacaggc gacgccccgc gtaccaccga gtccacggng gttgggcggt 300
ctcctcggcc aaccaggcgt gaacccggcg gatccgaatg cagcaagacc cgtgggc 357

<210> 579
<211> 269
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (29)
<223> a, t, c or g

<220>
<221> modified_base
<222> (224)
<223> a, t, c or g

<220>
<221> modified_base
<222> (246)
<223> a, t, c or g

<400> 579
ccattggtcg gtgtgcgcat accantacna cgcgccgggc acctgacgcg gcggccgcaa 60
ccattcggtg gccatcgcca tcgtctgcca cccggtcaac ggacgcacct tctcctggcc 120
gacctagtgc gcccacccgc cgccgttgcg tcccatcgat ccggtcaaca tgagcagcgc 180
caacaccgag cggtacatga catctgctgt ggaaccagtg acanattccg ccgcccatga 240
tgatcntcga ccgtcctccg gattcggtc 269

<210> 580
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (228)
<223> a, t, c or g

<220>
<221> modified_base
<222> (234)
<223> a, t, c or g

<400> 580
```
gccggcctgg tcaaaggggc gtccgaagga nccgggctgg gtaacaagtt cctggctcat 60
atccgcgaat gcgacgccat ttgtcaggtg gtgcgggtgt tcgtcgacga cnacgtgact 120
catgtcaccg gacgggtcga tccccagtcc gacattgagg tcgtcgagac cgagctgatc 180
ctggcagatc tgcaaaccct ggagcgggcc acgggccggc tggagaanga agcncgcacc 240
aacaaggcgc gcaagccggt ctacgacccg gc                                272
```

<210> 581
<211> 373
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (181)
<223> a, t, c or g

<220>
<221> modified_base
<222> (261)
<223> a, t, c or g

<400> 581
```
gatccactga ccacgatgac atatcgaaat gctcgacgat tccgatggcg atcaaggcca 60
cgatgccctg gccgttgggc ggtatctggt ggatggtgta cccgcggtag gttcccgtga 120
tcgtgtcgac ccagtccacg cgatgggcgg cgaggtcgtc ggcacgcatc accccgccgt 180
ntgccgccga gtgcgcctcg agtttggcgg ccagctctcc ccggtagaac tctcaccgtt 240
ggtcgccgcg atcttctcta ncgtcgccgc gtggtcagga aaggtaaaca gctcaccggg 300
tttcggcgct cgtccgccgg gcatgaacgc atctgcgaat ccgggctggg atgcgaacaa 360
cggacctgtg ccg                                                     373
```

<210> 582
<211> 314
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (36)
<223> a, t, c or g

<220>
<221> modified_base
<222> (100)
<223> a, t, c or g

<220>
<221> modified_base
<222> (113)
<223> a, t, c or g

<220>
<221> modified_base
<222> (132)
<223> a, t, c or g

<220>
<221> modified_base
<222> (142)
<223> a, t, c or g

<220>
<221> modified_base
<222> (208)
<223> a, t, c or g

<400> 582
tctactgccg aatcggggaa cggtcctcgc ccaccnggtt cgtgttgccg gaattactca 60
ggacaccgaa acgtcgagaa ctacgagcgg agttggacan aataccgctc ccnggtgggc 120
gcccccatcg anttgggaag cngaaatgtg ctctggaccc cacccaagaa tgacattgcc 180
ggccgccctc caactggaaa tagaaacngt gatcacccgc cgcgttcttg gaaggaatgg 240
catgccctgg gccgggcgtt ccttccgctg ccggactcct cccaccaatt caccgccgaa 300
ggcgtcccgt ctgc 314

<210> 583
<211> 135
<212> DNA
<213> Mycobacterium tuberculosis

<400> 583
atactcaagc ttctgtcacc gaaatcccgc atgggataac gggtttagat ttcgacaacg 60
ggaccgtgtt tctcaacaag ccggtcatca gctgggccgg cgacaacggt atctacttca 120
cccgctttcg cccgt 135

<210> 584
<211> 221
<212> DNA
<213> Mycobacterium tuberculosis

<400> 584
ctggctcaag cgctcggcgc gcaggtgaac tcggaccggc tcgacgtcgc cgaacgcgag 60
gcggtgctgg cccacgccga cgccgtcgtc gcacatatcg gcaccgtgca caagtctaca 120
acaacgccgg catcgcgtac aacggcaacg tcgacaagtc ggagttcaag gacatcgagc 180
gcatcatcga cgtcgacttc tggggcgtcc tccacgggcc c 221

<210> 585
<211> 70
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (70)
<223> a, t, c or g

<400> 585
ccgccctccg cattatgggt caagaaccat cgggtcggac ttctgggctt ccaacgctcg 60
cgccgtcccn 70

<210> 586
<211> 241
<212> DNA
<213> Mycobacterium tuberculosis

<400> 586
ccgtggcact gtcagacata tgcgccgctc ctcctcatcg ctgcgctcgg catcgtcgcc 60
ggcggtcatg gcgtcaccct acccaagccg aacgcgaaac gagaacgtgt tccattatta 120
gggtgtgagc accaatacca gattgctcac caggaactca cgcagcaccg ggacggatgt 180
cggccaccac gcccatctgg ggtggtagcg gggaaatacc gctaacgcgg ctccggtgcc 240
g 241

<210> 587
<211> 492
<212> DNA
<213> Mycobacterium tuberculosis

<400> 587
tactcaagct tgtccaaata tcgaagcgtc gggtcgcgag gctcggtcgg cagctccagc 60
aaaacccgct ccacccctag atgccggtat ccctcaaggt ctttatccgc cgcttcaccc 120
cactggcaca cggtcaccgg cacgtcgccc ccggccatgg cgcgcaaccg ctgaagcgga 180
cccgacagcc gctgcggtga tggactgatc gcgatccacc cggcattgag ccgggctatc 240
cgcgggaagt tcgccggtcc cccgcccaca tacagcggag gatagggctt tgtcaccggc 300
ttcggccagc agtagatcgg atcgaagtcc acatatgtcc catggaattc cgcctgctcc 360
tgcgttcaga tctcgattat cgcgcgcaac cgctcatcga tcacacgtcc gcgcaccgca 420
gggtccacac catggttggc gacttcttcg cgcaaccagc cacacccacg ccgaaacgaa 480
accgtccctg cg 492

<210> 588
<211> 313
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (250)
<223> a, t, c or g

<400> 588
caggcatgca agcttggcca actcctcatc ggacttgaag gtgccgtcct cgttggcggc 60
cctgctccac ggcacgttga tggcaccagg aatgtgtccg ggccgctggc tttgttcctg 120
cggcaggtgc gcgggggcca ggatcttgcc ggagaactcg tcgggagagc gcacgtcgat 180
gaggttcttg acgttgatgg ccgccaggac ctcgtcgcgg aatgcccgaa tcgtgttatc 240
cggcgggggan gcggtgtagg aagtcaccgg ccggctgacc gggtcgctgg acagcgggcg 300
tccgtcgagc tcc 313

<210> 589
<211> 305
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

<400> 589
```
atactcaagc ttcaaaacag gcctgttgtg ggcgcacccg gctcgccgag ttctgcacgc 60
accgcctcaa gtgcggcccg caccgccggc atctcccggt cacgcagggc cgcggcccgc 120
gccgcagcga cggcgtgttc gcgcagttcg ccgtcaatga tgctgacctg atcggccacc 180
cgggcggtct cggcgtcgtc ccgttcacta atcgcggtgc tcagcagcgt ctcgacagcc 240
accacccgag tggagaccag atgcnccacc acggaccgca gcgatgccag tcacctcacc 300
cgtcc                                                          305
```

<210> 590
<211> 394
<212> DNA
<213> Mycobacterium tuberculosis

<400> 590
```
caggcatgca agctttgcag ttgctgagta atgtcggcca acgtcaccac aatcgcgatg 60
aattcaatca tgccgcccag ggcggccaac ccaatggtgg ccgcgagcgg cagctcgatc 120
gcagcgcgga ggttgccggc cgccagttga ttcacgaaca gggtgaggtc ataggcgggc 180
aggatagtga cgaaggcaag acctagatct gccgtcggaa gaagaatcga gtatccggtc 240
gacacaacgg aagcgaaagt gtccgcgatg ttgatgagcg tcgccggttg tggcggcggt 300
ggcggcggta gcaccgtccg cacataccgc gggaacgcgg gcatccgaat ttggggcagg 360
gtgttcaagg cggctggcaa ctcaccatga atct                           394
```

<210> 591
<211> 457
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (445)
<223> a, t, c or g

<400> 591
```
ccggctcgta tgttgtgtgg aattgtgacc ggataacaat ttcacacagg aaacagctat 60
gaccatgatt acgccaagct atttaggtga cactatagaa tactcaagct tggccgcagg 120
gccgagtcga ttggtcgcgg tcgcctcgac agttagctta tgcaatgcta acttcggggc 180
aaagttcagg cggatcggcc gatggcgggc gtaggtgaag gagacagcgg aggcgtggag 240
cgtgatgaca ttggcatggt ggccgcttcc cccgtcgcgt ctcgggtaaa tggcaaggta 300
gacgctgacg tcgtcggtcg atttgccacc tgctgccgtg ccctgggcat cgcggtttac 360
cagcgtaaac gtccgccgga cctggctgcc gcccggtctg gtttcgccgc gctgacccgc 420
gtcgcccatg acagtgcgac cctgnaccgg gctggcc                        457
```

<210> 592
<211> 438
<212> DNA
<213> Mycobacterium tuberculosis

<400> 592
```
gtgtgctgtc aattcagagc tgagcctgat gcactcaact tactgagcat gctaacgctg 60
gtcgtgcggg tcttgttccc gcgtgtcggc agggcacacg ctcggggcgt agctgggaga 120
ggccccggtc aagcccggag agcagtgctc agtccgccag cttgaccgac tttcgatgag 180
aacgcgcttc tcgccgtatt gaactggcgt gctgacggtc gctgagcagc gctcgccgag 240
tgcggccgct gattctttca tcgagccagg aggcgcattc gtgttcggcc gcctgcgggt 300
cggccccatc gtcgacgcga tccgtcaccc actcctcgat caggtctgcc tcatcgaacg 360
ggccaacggt gctgtcggag taagtgtgcg tgggcacgcg agccgggtgc tgtggtacac 420
ccaccgttgc atgaacaa                                             438
```

<210> 593

<211> 220
<212> DNA
<213> Mycobacterium tuberculosis

<400> 593
atactcaagc ttcaccaggc gccggcgggc cgcggcgcca agccaggcag ccgcgctcgg 60
cgcgtcgggg ccttccgccg gctcggccga cagttcgatc tctggatcgg cggggctctc 120
cgggccggcc tcggcgacct cagcgggccg cgccttccgg ccgaaccatt ccctagccat 180
agataaccgc acctcaatgc acggtttggc ggcaacccgg 220

<210> 594
<211> 266
<212> DNA
<213> Mycobacterium tuberculosis

<400> 594
agcttccgtc acgacccgcc ctcgccggtg ccggcgccat cggtcatcgg atctcatgac 60
gacgtcacgt aggcccgcta gccgcgagcg ggcgcggtca actggcgagg cggcggcgac 120
gtgactgagc tggccgagct ggaccggttc accgcggaac taccgttctc gctcgacgac 180
tttcagcagc gggcttgcag cgcgctggaa cgcggccacg gtgttgctgg tgtgcgcgcc 240
gaccggcgct ggcaagacgg tggtcg 266

<210> 595
<211> 105
<212> DNA
<213> Mycobacterium tuberculosis

<400> 595
atactcaagc ttgccgggac cgcggaacag aaccggcggt tcctaccgcg gtgtgcggcc 60
ggcgcgatat cggcctcccg actaaccgaa cccgatgtgg gctcc 105

<210> 596
<211> 141
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (138)
<223> a, t, c or g

<400> 596
acgttggctc tgccggaacg tatttccagc ggcacgcatt cggcgtgggt gccgggcgcc 60
gagttgcgtc gctgggatca cgcagcagtc gccggcggct gccgtcgggc tatgaattgc 120
accgagccgg aaaatccnca c 141

<210> 597
<211> 234
<212> DNA
<213> Mycobacterium tuberculosis

<400> 597
atactcaagc ttgtcgtatt ccgtggcact gtcagacata tgcgccgctc ctcctcatcg 60
ctgcgctcgg catcgtcgcc ggcggtcatg gcgtcaccct acccaagccg aacgcgaaac 120
gagaacgtgt tccattatta gggtgtgagc accaatacca gattgctcac caggaactca 180
cgcagcaccg ggacggatgt cagccaccac ccccatctgg ggtggtagcg ggga 234

<210> 598

<211> 184
<212> DNA
<213> Mycobacterium tuberculosis

<400> 598
cgttggtagc ccgatatgca tagtgtatct tactgaacat gatttccatt atggagcccg 60
gggtgccggc agcgcgaacg gtgcgccgtc agacgcgggc ggcactgacc agggtgttgc 120
gggcgaacat cggcccggct tcggattccg gtccgggtac cgggcgaccc accgcttcga 180
ggta 184

<210> 599
<211> 351
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (335)
<223> a, t, c or g

<400> 599
atactcaagc ttggccaact cctcatcgga cttgaaggtg ccgtcctcgt tggcggccct 60
gctccacggc acgttgatgg caccaggaat gtgtccgggc cgctggcttt gttcctgcgg 120
caggtgcgcg ggggccatga tcttgccgga aaactcgtcg ggagagcgca cgtcgatgag 180
gttcttgacg ttgatggccg ccaggacctc gtcgcggaat gcccgaatcg tgttatccgg 240
cggggaggcg gtgtatgagg tcaccggccg gctgaccggg tcgctggaca gcgggcgtcc 300
gtccagctcc cacttcttgc gggcgccgtc caacnacttg acttctcctg g 351

<210> 600
<211> 438
<212> DNA
<213> Mycobacterium tuberculosis

<400> 600
atatcttaag cgtcgggtcc cgaggctcgg tcggcagctc cagcaaaacc cgctccaccc 60
ctagatgccg gtatccctca aggtctttag ccgccgcttc accccactgg cacacggtca 120
ccggcacgtc gcccccggcc atggcgcgca accgctgaag cggacccgac agccgctgcg 180
gtgatggact gatcgcgatc cacccggcat tgagccgggc tatccgcggg aagttcgccg 240
gtcccccgcc cacatacagc ggaggatagg gctttgtcac cggcttcggc cagcagtaga 300
tcggatcgaa gtccacatat gtcccatgga attccgcctg ctcctgcgtc cagatctcga 360
ttatcgcgcg caaccgctca tcgatcacac gtccgcgcac cgcagggtcc acaccatggt 420
tggcgacttc ttcgcgca 438

<210> 601
<211> 410
<212> DNA
<213> Mycobacterium tuberculosis

<400> 601
atactcaagc ttgtcgcggt aaacccgcag cagggcggtg ggtgcggtgt caaaaacaac 60
cacacttctt tgcggttcgg tgatctcgac accggccgcg agccgaccac catgcgcgcg 120
taaatcggcg atcagcgcgt cggctatcgc ctgggtgccg cccaccggaa tcggccagcc 180
gaccgaatgg gccagcgttg ccagcatcag tccggcgccg gccgacacca gtgacggcaa 240
cggtgaaatc gcgtgggcgg caacgccggt gaacaacgcg cgggcatcct cgcccgccag 300
cgaccgccag gcaggggtgc cctgggccag catccgcagc ccgagacgca ggaccgagcc 360
cagtgcagta ggcaaagacc gcttgtcgga gacatgaact ccacgaccgt 410

<210> 602
<211> 456

<212> DNA
<213> Mycobacterium tuberculosis

<400> 602
```
agcttattga accgcgggtc gcaggcaaag tggacctcat aacgactcgg gtccagcgac 60
cgcgccaaca cgaacggccg gacgacgtgg gccagggtcg cggcctcccc tacaaacagg 120
atccgttgcc tgcgagcgac aggctccggt gcggcgttgg gcgccgtgct cgtcccagcg 180
tccggtcccg ggtcgccggc gacgcttgtt tcctccatac tcgcccccta atctcgaggc 240
agcccgtacc cgcaggcaac ctcccaaaaa tgcaatcccc caaaatgcaa tgcgtcgagc 300
tatttctcac accgaccgct agttgcggat cagaaatccg ttgggcgcgg aagtccagcc 360
gaatttgttc tcccgctccg catcatgctt gtaatcgttt ggaaattcat cctcatatgc 420
ctcgatcgct tcatagggtc caggccaaac cgggca                           456
```

<210> 603
<211> 217
<212> DNA
<213> Mycobacterium tuberculosis

<400> 603
```
cttccggctc gtatgttgtg tggaattgtg agcggataac aatttcacac aggaaacagc 60
tatgaccatg attacgccaa gctatttagg tgacactata gaatactcaa gcttggccac 120
ctcgcggtgt gtggtggaac ccatctgagc agtgtgccaa accggggcag acagctccca 180
attgacgtga gcccgctcac ttgctgggta agcgtcg                           217
```

<210> 604
<211> 478
<212> DNA
<213> Mycobacterium tuberculosis

<400> 604
```
tagcgccccc tcccgggcgg agctccacgg cgtggatcaa ggtaccggcc gggatgttgc 60
gcaatggcag gttgttgccc ggcttgatgt cggcgttagc gccggattcc accacatccc 120
cttgcgaaag tccgttgggt gcaatgatgt agcgcttctc cccatcgaga tagtggagca 180
acgcaatccg tgcggtacgg ttcgggtcgt actcgatgtg cgcgaccttg gcgttgacac 240
catctttgtc attgcggcga aagtcgatca tccggtaagc gcgcttatga ccgccgcctt 300
tgtgccgggt ggtaatccgg ccatgcgcgt tgcgtccacc gcgaccgtgc agcgggcgca 360
ccagcgactt ctccggggtt gaccgggtga tctcggcgaa atcagatacg ctggcgccgc 420
gacgaccaag cgtcgtgggc ttgttcttgc gaattgcatg tctaatcagg tctttctc    478
```

<210> 605
<211> 459
<212> DNA
<213> Mycobacterium tuberculosis

<400> 605
```
tgaaactata taatactcaa gcttgccaaa gaagacctcg tcgaccaagc aggacgcgac 60
cgtcgaggtg gcgatccggc ttggcgtcga cccgcgtaag gcaaaccaga tggttcgcgg 120
cacggtcaac ctgccacacg gcactggtaa gactgcccgc gtcgcggtat tcgcggttgg 180
tgaaaaggcc gatgctgccg ttgccgcggg ggcggatgtt gtcgggagtg acgatctgat 240
cgaaaggatt cagggcggct ggctggaatt cgatccgcg atcgcgacac cggatcagat 300
ggccaaagtc ggtcgcatcg ctcgggtgct gggtccgcgc ggcctgatgc ccaacccgaa 360
aaccggcacc gtcaccgccg acgtcgccaa ggccgtcgcg gacatcaagg cggcaagat 420
caacttccgg gttgacaagc aggccaacct gcacttctc                        459
```

<210> 606
<211> 464
<212> DNA
<213> Mycobacterium tuberculosis

<400> 606
```
gctgagctcc acggcgtgga tcaaggtacc ggccgggatg ttgcgcaatg gcaggttgtt 60
gcccggcttg atgtcggcgt tagcgccgga ttccaccaca tccccttgcg aaagtccgtt 120
gggtgcaatg atgtagcgct tctccccatc gagatagtgg agcaacgcaa tccgtgcggt 180
acggttcggg tcgtactcga tgtgcgcgac cttggcgttg acaccatctt tgtcattgcg 240
gcgaaagtcg atcatccggt aagcgcgctt atgaccgccg cctttgtgcc gggtggtaat 300
ccggccatgc gcgttgcgtc caccgcgacc gtgcagcggg cgcaccagcg acttctccgg 360
ggttgaccgg gtgatctcgg cgaaatcaga tacgctggcg ccgcgacgac caggcgtcgt 420
gggcttgtac ttgcgaattg ccatgtctaa tcaggtcttt ctct 464
```

<210> 607
<211> 205
<212> DNA
<213> Mycobacterium tuberculosis

<400> 607
```
atactcaagc ttgttggtga cctcgccggc gaacagttct cgcacgattt ccggattagc 60
gggactggtc accagttggg tatgcgggaa ggcgctgacg ttcgccgcga ttagctgttt 120
gatggacgcg gcggtgatgt cctgatcacg gaactggctg taatagccca gggtcgccac 180
gcttccatcc gggcccggac ccggc 205
```

<210> 608
<211> 244
<212> DNA
<213> Mycobacterium tuberculosis

<400> 608
```
gatgatcgcc ggtgccaccc cgatccgtgc ctcggtcagc gcgaacgtgc tttccggtcc 60
ggcgaccacc atgtcgcacg caccgaccag gccgaacccg ccggcccgca catgcccgtt 120
gatggcgccg accaccggca gcggcgactc gacgatggcg cgcaacagcg ccgtcatttc 180
ccgcgcccgc gccaccgcca tccggtacgg atcaccacca cctccgccgg cctcgctgag 240
gtcc 244
```

<210> 609
<211> 289
<212> DNA
<213> Mycobacterium tuberculosis

<400> 609
```
atactcaagc ttgccgcaat cgaaaccaac ctgtttgtgc cgcaagaaat tacgccgtgg 60
cccggcgccg atcaagaaac gccccggcgc gcggcggtgt cgtcgtatgg catgacgggc 120
accaatgtgc acgccattgt cgagcaggca ccggtgccag cccccgaatc cggtgcacca 180
ggcgacaccc cggccacacc cggtatcgac ggcgcgctgc tgttcgcgct gtcggccagc 240
tcgcaggacg cgctgcggca aaccgccgcg cggctggccg attgggtct 289
```

<210> 610
<211> 282
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (18)
<223> a, t, c or g

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

```
<220>
<221> modified_base
<222> (243)
<223> a, t, c or g

<220>
<221> modified_base
<222> (281)
<223> a, t, c or g

<400> 610
ttggcgggtt ggccacanca ncccgccggt gacggcgacg atgctgggct ggttgcggcc 60
ctgcgccacc gcggcttgca tgctggttgg ctgtcttggg acgatcccga aatagtccac 120
gcggatctgg tgattttgcg ggctacccgc gattaccccg cgcggctcga cgagtttttg 180
gcctggacta cccgcgtggc caatctgctg aactcgcggc cggtggtggc ctggaatgtc 240
cancgccgtt cacctacgtg accttgatgg gatccggggg nt                    282


<210> 611
<211> 312
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (20)
<223> a, t, c or g

<220>
<221> modified_base
<222> (43)
<223> a, t, c or g

<220>
<221> modified_base
<222> (47)
<223> a, t, c or g

<400> 611
ncgtggacac cggtgtcgan cgccaccagc cgcatgtctg cangtcnatt ccgtcctcgg 60
caacatcttg aatgccgagc agcgcctggg cgtgatcggc aaccggggat gaccgctcgc 120
cgatccgctc gacaatcccg gcggcacgtg acatgccggc ggacggctcg acgagctgga 180
acttcagcga cgacgatccg gaattgatca ccagcacggt gctactcatg gaccccctgcg 240
cctgaatccc gtgatggcca cggtgttgac tattcgtcga cagtgcaccc gagatagtct 300
tcacggctgc gt                                                     312


<210> 612
<211> 349
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (129)
<223> a, t, c or g
```

<220>
<221> modified_base
<222> (256)
<223> a, t, c or g

<220>
<221> modified_base
<222> (262)
<223> a, t, c or g

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

<220>
<221> modified_base
<222> (285)
<223> a, t, c or g

<400> 612
```
catgtattgc cgtgctcacg gcgccacgct cgatggtttc tcgaagtctc cgggctggtg 60
tacagcttct cgttgatctc gttcgccacg ccgtcctctt cccgccgacg acccgatctc 120
gatctccana atgatcttgg cggccgccgc cgccttgagc agctcctggg cgatggccag 180
gttctcatcg atgggcactg ccgaccgtcc cacatgtgcg acggaacaaa gatgtcacct 240
tgctcacgcg tgcgcnagat cncanaaggg ccggacatac tgtcnacttg tccttgggca 300
gtggtccgtg tcagcccacg tgacgggtac ttggcgcgat aacgtggtg       349
```

<210> 613
<211> 350
<212> DNA
<213> Mycobacterium tuberculosis

<400> 613
```
gccaccacga cccggccgta actctgctca cggaaatgcg gccaggccgc gcgtagcacg 60
tggtatccgc cataaaggtg caccttaagc acggcgtccc aattctcgaa cgacatcttg 120
tggaaggtgc cgtcgcgcaa gatcccggcg ttgctcacca caccgtgcac ggcgccgaat 180
tcgtcaagcg cggtcttgat gatgttcgct gcgccgtcct cggtggcgac gctgtcctta 240
gttggcgacc gcccggcccc ccttgtcgcg aatctcggcg acgacctcat cggccatcgc 300
cgaacggcgc ccgtgcccgt cgcgggcgcc accgaggtcg ttgaccacga       350
```

<210> 614
<211> 126
<212> DNA
<213> Mycobacterium tuberculosis

<400> 614
```
caggcatgca acctttgtcc acacggcgtc tactccgtgc aaggtccgac cgcttccacg 60
tcccgccgtg acggtgctcc atctccctca gcaacgcgtg aagtggtccg atcccgcggc 120
ttcagg                                                       126
```

<210> 615
<211> 395
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (356)
<223> a, t, c or g

<400> 615
gttgagacgc aaccagcgca caacgacgat ttggcgtagc ggcggacgtc tgctcgattc 60
gatcacgtcg cgctcgcatc gagcatggcc cgcgacgcta cacgatcgcc gtcgtcgatg 120
acacgaccga gccgtacgcc ggccgtaagc cgcgccagga ttcggcgaaa aacgtctacg 180
tggcgggtgt actgggtgtc gaatgattcg tggggtgcgt atgcgtcctg caatcgtcga 240
catagatccg tcgccgcatc gcgtcgacaa ctccgggtga gtggaataca cttgccgatc 300
acgcgacgtg cgcggatcga tgccgaccga aatacgacca catggctctt gttgcncagt 360
gttggcggca tcaaataccc tcagtgccgt ccgac 395

<210> 616
<211> 371
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (3)
<223> a, t, c or g

<220>
<221> modified_base
<222> (11)
<223> a, t, c or g

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<400> 616
ttnccgcctt nacgcctact ccnagacgat gctcgacgcg tgtgagcaca cggcgctgct 60
gtagacggca cggcgcagct ggatcgcgct tggtgcaccc aagcctctac gcgcgtcgct 120
gcgtcgtcat cgggtaccga acatattccg gtcgttgcgc agagtgtgca tgtgcggctc 180
ttgtgaacga acatagcaaa gcgtatatgt ctgtggcggc tctgcagata tcgcgataat 240
acgtatatac ataaggtggc gcgcgatcta tcggtatatc cgttatggcg gacgtgcgtg 300
agcgtgagtc gcggcgcatc gcgcacttcg cgatcgcgtg actggtcctc gcgactgcgc 360
gcatgcgtag c 371

<210> 617
<211> 423
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (86)
<223> a, t, c or g

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<220>
<221> modified_base
<222> (191)
<223> a, t, c or g

<400> 617
ggtgatgacg cacttgcttc gaatgagtca ttgactactc ccgtggttgt cctgcgatgg 60

```
tggagtgccg cgcagccttg cccgangtcg cgatcgcgtc gcgggcttcg gggagcagac 120
tgacctgcag atggaagtcg tgccacatgc ccgcgaacgg cgagctcgat gcttgttttc 180
gaagngcgca ngcggtttcg atcttgtccc cgtcaacgca gatcggatct cgccgcggtc 240
tgcatgacga tgggcgcagg cccgctcatg tcccgtagac ggggagatac gggcagccgc 300
ggatcgagac ctacgtagcg cggcgcccat cgtgccatcg acgaagaatg acggatcgcg 360
cagcgccgtc gcgtcgcttc gatgtcacgc gagatcgcca cggcagatca gcgatgcgcg 420
ggc                                                               423
```

<210> 618
<211> 354
<212> DNA
<213> Mycobacterium tuberculosis

<400> 618
```
cggtacgccg gcaacaaacg ccttgtgacg agcgcgtccg agcggtcatc ggcctccacc 60
gtcatgcaca gctccttctc caggtctacg ccgacgtcgc ggtccacatt ggtgagcttg 120
gcgaatgcct cggcaacctc gtcgaaatgc gcctccgcgt ccgcatcgaa ggtcgccatg 180
tcaaagatca actcgacgta gtagctagtt accgcatcag gtcagtgttt gctggcctcg 240
gagtccggcc gaacaatggc catttcccgc gactctagaa tccagtcatc gtctcggtga 300
cgacgccttg ccgatcacat agctcgaccg gatcggagag aatctggttc tcgt        354
```

<210> 619
<211> 128
<212> DNA
<213> Mycobacterium tuberculosis

<400> 619
```
atactcaagc ttaagcgcag cagtaccggc ggtgcctggg catcccagca aaacggggag 60
ctcaacgaac gattcctgaa cgaagggtcg tccaccaacc tccaaaccga acggttgcca 120
gccccggc                                                          128
```

<210> 620
<211> 295
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<400> 620
```
gcaagtccgc tcaatgtggt tgtgatcaca ngactacgtc gcctcaatca gctcaaacgt 60
caccccgtgg cgtgctgcgc agcatgaagg tcggcgccg cacgatgtgg gcgaagcaac 120
aggtaataac tggtcggcat gggtcaaccc tcattgggcc gttgcggatc gggtgcacgc 180
ccggagtgcc ggtcgaactc aacaccgcct tcaccgatct tttcgtcgaa aatggcggtc 240
gtgtcggggt atacgtccgc gatcccacga ggcggaatcc gctgagccgc actga       295
```

<210> 621
<211> 361
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (47)
<223> a, t, c or g

<220>

<221> modified_base
<222> (53)
<223> a, t, c or g

<220>
<221> modified_base
<222> (88)
<223> a, t, c or g

<220>
<221> modified_base
<222> (151)
<223> a, t, c or g

<220>
<221> modified_base
<222> (193)
<223> a, t, c or g

<220>
<221> modified_base
<222> (196)..(197)
<223> a, t, c or g

<220>
<221> modified_base
<222> (199)..(200)
<223> a, t, c or g

<220>
<221> modified_base
<222> (202)
<223> a, t, c or g

<220>
<221> modified_base
<222> (250)
<223> a, t, c or g

<220>
<221> modified_base
<222> (255)
<223> a, t, c or g

<220>
<221> modified_base
<222> (266)
<223> a, t, c or g

<400> 621
atactcaagc ttcgcgccct caagcggctg aaggtggttc cggcgtncca acngtcgggc 60
aactcgccga tgggcatggt gctcgacncc gtcccggtga tcccgccgga gctgcgcccg 120
atggtgcagc tcgacggcgg ccggttcgcc ncgtccgact tgaacgacct gtaccgcagg 180
gtgatcaacc gcnacnncnn gntgaaaagg ctgatcgatc tgggtgcgcc ggaaatcatc 240
gtcaacaacn agaancggat gctgcnggaa tccgtggacg cgctgttcga caatggccgc 300
cgcggccggc ccgtcaccgg gccgggcaac cgtccgctca agtcgctttc cgatctgctc 360
a   361

<210> 622
<211> 361
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (153)
<223> a, t, c or g

<400> 622
tgcgcatggc agttgttgcc ggcttgagtc gcgttagcgc ggattccacc acatcccttg 60
cgaagtcgtg ggtgcaatga tgtagcgctt ctcccatcga gatagtggag caacgcaatc 120
cgtgcgtacg ttgggtcgta ctcgagtgcg cancttggcg ttgacaccat ctttgtcatt 180
gcggcgaagt cgatcatccg gtaagcgcgc ttatcgacgc cgcctctgtg ccgggtggta 240
atccggccat gcgcttgcgt ccaccgcgac gtgcagcggg cgcacaccga cttctccggg 300
tgacgggtga tctcggcgaa tcagaacctg gcgcgcgaca cagcgtcgtg gctgtacttg 360
c   361

<210> 623
<211> 312
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (119)
<223> a, t, c or g

<400> 623
tgggtgatca gatactggct agttggtcgg gtggggtgat cgaagatcgc ggtggccggc 60
agcgttactg cggtgacgct gttaagcggt tacgtactcc acggcactca angaattana 120
tcccgaatcg gcaaaccctg gccagcgtcg agtccgcagc gccgtcgcgc cccccaccgc 180
tgcggcatgc tcacatacca cctcgatcgc tgcgggagtt gctcgtcggc cgaccgaccg 240
gccagccggg cggcaaaccg gaggacccaa gattcagcac caccatcgct agcccgatct 300
ggccgcgcgt gg   312

<210> 624
<211> 454
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (19)
<223> a, t, c or g

<220>
<221> modified_base
<222> (308)
<223> a, t, c or g

<220>
<221> modified_base
<222> (350)
<223> a, t, c or g

<400> 624
tcgtagcggt tgcgaccant ccgcggacag ctccgccacg cgacgggtcg ggatcaccgc 60
ggtcaaacca ccgagcggcg aggatctctg ccgtcgacg tgaccgcgca cggccgcggt 120

```
gatggccagt cccgaccgcc gttccacttg gcgtacgcgc tggatgtgtt gtgccgcaac 180
ggaatcccac ctcaattatg acctcgttgt gggcgagcgc ggtatcgtac gcccgaccag 240
gaatcgtcga tgctatctca cgtcaccgaa ggcctctccc agcacaccgc atccagaacg 300
tgcacacngt cgacatgtct cggcggatcc gcctgcagaa cgaacgccan gtgcgctgtg 360
cgacacgggt cgcgatcacc gctcgcacgc ggagatcggc acacgcgcag cgcatcgatc 420
ataatctctc gatgcggtct ccaccaccga acag                              454
```

<210> 625
<211> 366
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (145)
<223> a, t, c or g

<400> 625
```
atactcaagc ttcgctgagg tggtggggca cgatcacgtc accgcaccgc tgtcggtggc 60
gctggatgcc ggccggatca accacgcgta cctgttctct gggccgcgtg gctgcggaaa 120
gacgtcgtca gcgcgtatcc tggcncggtc gttgaactgt gcgcagggcc ctaccgccaa 180
cccgtgcggg gtctgcgaat cctgcgtttc gttggcgccc aacgccccg gcagcatcga 240
cgtggtagag ctggatgccg ccagccacgg cggcgtggac gacacccgcg agctgcggga 300
ccgcgcgttc tatgcgccgg tccactcacg gtaccgggta tttatcgtcg acgaggcgca 360
catggt                                                             366
```

<210> 626
<211> 363
<212> DNA
<213> Mycobacterium tuberculosis

<400> 626
```
gcactcacgc tggtacaaga ccttcacaaa atctgaaatc ctgacccgat acttgaacct 60
ggtctcgttc ggcaataact cgttcggcgt gcaggacgcg gcgcaaacgt acttcggcat 120
caacgcgtcc gacctgaatt ggcagcaagc ggcgctgctg gccggcatgg tgcaatcgac 180
cagcacgctc aacccgtaca ccaaccccga cggcgcgctg gcccggcgga acgtggtcct 240
cgacaccatg atcgagaacc ttcccgggga ggcggaggcg ttgcgtgccg ccaaggccga 300
tccgctgggg gtactgccgc agcccaatga gttgccgcgc ggctgcatcg cggccggcga 360
ccg                                                                363
```

<210> 627
<211> 367
<212> DNA
<213> Mycobacterium tuberculosis

<400> 627
```
atactcaagc ttgtataaaa agatcggtga gcgcatcgat tcgctccgcc gggtttgccg 60
ctgcggcggc ggagctgccg tgaccgtcta tttgggtgat cagatactgg gctagttcgg 120
tcggggtggg gtgatcgaag atcgcggtgg ccggcagcgt tactgcggtg acggctgtta 180
agcggttacg tacctccacg gcactcaagg aattaaatcc cgaatcggca aacgcctggc 240
cagcgtcgaa tccggcagcg ccgtcgcgcc ccagcaccgc tgcggcatgc tcacatacca 300
cctccatcgc tgcggcgaat tgctcgtcgg ccgaccgacc ggccagccgg cggcaaacc 360
cggaaga                                                            367
```

<210> 628
<211> 518
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<220>
<221> modified_base
<222> (114)
<223> a, t, c or g

<220>
<221> modified_base
<222> (194)
<223> a, t, c or g

<220>
<221> modified_base
<222> (358)
<223> a, t, c or g

<220>
<221> modified_base
<222> (364)
<223> a, t, c or g

<220>
<221> modified_base
<222> (389)
<223> a, t, c or g

<220>
<221> modified_base
<222> (408)
<223> a, t, c or g

<220>
<221> modified_base
<222> (442)
<223> a, t, c or g

<220>
<221> modified_base
<222> (448)
<223> a, t, c or g

<220>
<221> modified_base
<222> (452)
<223> a, t, c or g

<220>
<221> modified_base
<222> (465)
<223> a, t, c or g

<220>
<221> modified_base
<222> (492)
<223> a, t, c or g

<400> 628
cctcatcata tgccgataga gctctacata ttcaggagat caccatggct cgtgcggtcg 60
ggatcgactc gggaccacca actccgtcgt ctcggttctg gaangtggcg accnggtcgt 120

```
cgtcgccaac tccggagggc tccaggacca cccgtcaatt gtcgcgttcg cccgcaacgg 180
tgaggtgctg gtcngccagc ccgccaagaa caggcagtga ccaacgtcga tcgcaccgtg 240
cgctcggtca agcgaccatg ggcagcgact ggtccataga gattgacgca agaaatacac 300
gcccggagat ctcgccgcat tctgatgaac tgaacgcgac ccgaggctac tcggtganga 360
catnacgacg cgttatcaca ccccgcctnc ttcaatgacc ccacgtcngg caccaaggac 420
ccggcaatcg cggctcactt gngcgatngt cnacaaccaa cgcgncgcct ggctacgggc 480
tcaacaaggc anaagacaca atccgctctc gattggtg                         518
```

<210> 629
<211> 435
<212> DNA
<213> Mycobacterium tuberculosis

<400> 629
```
atactcaagc ttatcgaggc ggcgcatacc gaagcgtggg aaatccagac cgaataccgc 60
gacgtgctgg acactttggc cggcgagctg ctggaaaagg agaccctgca ccgacccgag 120
ctggaaagca tcttcgctga cgtcgaaaag cggccgcggc tcaccatgtt cgacaacttc 180
ggtggccgga tcccgtcgga caaaccgccc atcaagacac ccggcgagct cgcgatcgaa 240
cgcggcgaac cttggcccca gccggtcccc gagccggcgt tcaaggcggc gattgcgcat 300
gctacccaag ccgctgaggc cgcccggtcc gacccggcca aaccgggcac ggcgccaacg 360
gttcgcccgc cggcaccacc ggtccggtga ccgcagtacg gtccccccag cctgactacc 420
gtgccccggc gggct                                                  435
```

<210> 630
<211> 398
<212> DNA
<213> Mycobacterium tuberculosis

<400> 630
```
tggccgggct ggtagcccgc gtatggcaag gttccgctca atgtggttgt gatgcagcag 60
gactacgttc gcctcaatca gctcaaacgt cacccccgtg gcgtgctgcg cagcatgaag 120
gtcggcgccc gcacgatgtg ggcgaaggca acaggtaaga acctggtcgg catgggtcga 180
gccctcattg ggccgttgcg gatcgggttg cagcgcgccg gagtgccggt cgaactcaac 240
accgccttca ccgatctttt cgtcgaaaat ggcgtcgtgt ccggggtata cgtccgcgat 300
tcccacgagg cggaatccgc tgagccgcag ctgatccggg ctcgccgcgg cgtgatcctg 360
gcctgtggtg gtttcgagca taacgagcag atgcgaat                         398
```

<210> 631
<211> 464
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (39)
<223> a, t, c or g

<220>
<221> modified_base
<222> (58)
<223> a, t, c or g

<220>
<221> modified_base
<222> (67)
<223> a, t, c or g

<220>
<221> modified_base
<222> (100)

<223> a, t, c or g

<220>
<221> modified_base
<222> (108)
<223> a, t, c or g

<220>
<221> modified_base
<222> (187)
<223> a, t, c or g

<220>
<221> modified_base
<222> (198)
<223> a, t, c or g

<220>
<221> modified_base
<222> (194)
<223> a, t, c or g

<220>
<221> modified_base
<222> (319)
<223> a, t, c or g

<220>
<221> modified_base
<222> (371)
<223> a, t, c or g

<220>
<221> modified_base
<222> (391)
<223> a, t, c or g

<220>
<221> modified_base
<222> (460)
<223> a, t, c or g

<400> 631
gtccagtcaa gcatcggtcc tctccgacta cgccaagant ggcgacgtgt cagtgcanac 60
agcgganatg gtggcgccta tgcgtcgacg ctcacaaacn gcggtgancg cgttctggtc 120
gtgcaccatc gagccgtgcc agcccggccg cgtgccgtca gccgcatcca ctggatgcct 180
tctcggngtt tcaatcangt acangcgacg ttcgccacca tcgtgccggg gcacggttag 240
cgagaaaccg ccgacttcac cgattgcctc ggtgatgccg tcgaacagat cgggcctatt 300
gtcgacagcc agtgtgatnc gtatttgccg ccgtgctcct cgtcgcaacg atgcgaacac 360
agatccgtgg nggacgatag cggctgacaa ngtgggggca acacaatcac atgccacatt 420
tcttcatttc acgcccacaa cccagacttc gtctcgatgn gccg 464

<210> 632
<211> 499
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (103)
<223> a, t, c or g

<220>
<221> modified_base
<222> (255)
<223> a, t, c or g

<220>
<221> modified_base
<222> (336)
<223> a, t, c or g

<220>
<221> modified_base
<222> (342)
<223> a, t, c or g

<220>
<221> modified_base
<222> (368)
<223> a, t, c or g

<220>
<221> modified_base
<222> (417)
<223> a, t, c or g

<220>
<221> modified_base
<222> (499)
<223> a, t, c or g

<400> 632
cacgcggtct ggcccgatcc gaagatccct ttgccggcgt ggcggctctg ctcggcggtg 60
ttgtacactt ctcgaacacc tcggcaccga caccaccacc gtngcttgaa caccgccaac 120
atcggcagca gatcttgatg gtcctggtga atcccacggt gactttggag tggaaggcgc 180
catactgatc gccgcgccag cacatgagct agcggcagga aaaccagcag ccgctcacct 240
tgcgcagcag cgtcnggtga tatgcctggc gcccttaatc tcgtgaacca gttggattgg 300
gtcaactggc agccttgggt ctccggtggt gccgangtgt anataagctc ccgggtccgt 360
caacgtantg cgcaggcggc ggttactcgg cgggtcaacg agccccgctc gtgagcnatc 420
agcctttgga ccgaacggga ttcatactcc gcaggcggcc ctccgaaatc ggcacatgtc 480
ctttgatcgt tcgcaacan 499

<210> 633
<211> 343
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (178)
<223> a, t, c or g

<220>
<221> modified_base
<222> (235)
<223> a, t, c or g

<400> 633
ggccatgtca catcggtggt acaggtaaac cgcgccgtgt gcgcggtctc ggagatcaga 60
acgtggtcgc agttgaaccg cgggctttca gccagtcgcg ataatcggcg gaagtcggcg 120
cctgccgccc caactagcgc gactcgccac ctagcacacc gatggcgaag gccatgtntc 180
cggccacgcc gccgcggtgc atcaccaagt catcgactag gaagctaagc gacancttgt 240
gcaggtgttc gggcagtagc tgctcggaaa atcggctgga aaccgcatca aatggtcggt 300

ccaatcgaac cggttacccg atcgtcacaa aaatctccgt cct

53941100

343

<210> 634
<211> 192
<212> DNA
<213> Mycobacterium tuberculosis

<400> 634
gggtctacaa ccaccgggtc tgacttctgg gcttccaccg ctcgcgccgt cgcgacaaac 60
agcgcggtcg aaccgacact cgttgtgatg tcccagctat cacctccggt aggcacccaa 120
tcgaccctac ccggctatct caccccccgat ctccaggctc cgccgatcca tgcgcatccc 180
ggtccggatc cc 192

<210> 635
<211> 376
<212> DNA
<213> Mycobacterium tuberculosis

<400> 635
caggcatgca agcttgtcgt attccgtggc actgtcagac atatgcgccg ctcctcctca 60
tcgctgcgct cggcatcgtc gccggcggtc atggcgtcac cctacccaag ccgaacgcga 120
aacgagaacg tgttccatta ttagggtgtg agcaccaata ccagattgct caccaggaac 180
tcacgcagca ccgggacgga tgtcagccac cacgcccatc tggggtggta gcggggaaat 240
acggctaacg cggctccggt gccggcagcc cagcgcagac cctcggcggc ggacacggct 300
aacaacgacg acccatagtt gttctttgcc ggatggccgt gtttgctgac atatcgggcg 360
cggcgccggc gccgcc 376

<210> 636
<211> 83
<212> DNA
<213> Mycobacterium tuberculosis

<220>
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<223> a, t, c or g

<220>
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<222> (32)
<223> a, t, c or g

<220>
<221> modified_base
<222> (61)
<223> a, t, c or g

<400> 636
nctacgctgc tgaatgttgt gcgccggagg anctcaagac ccacgcggtt gtacgcggac 60
ntgcgacatg ttcaaccgcc gga 83

<210> 637
<211> 319
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (241)

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<223> a, t, c or g

<400> 637
ctaaccaaca agccatggtg gttggcgccg tcgagaggtc ggcggtcgcc acaacgggaa 60
gatcgccttg agcgtcgctc gaccgccgcc tcgagttggg tcataacgaa gtactgatgc 120
cgatcatgtc gacgtgtccg tcgcatcagc gtgcagcggc gacccctcga cgagcctcgg 180
tgccgccgcg gccagggcac cagctgtttt agcgcattgt gctccgccgg taataaagga 240
ngtcggtcgc ctccgctgct gtggttgcgg aataacatct tcccttcctg caacaggatg 300
agaatggttt taattgctc 319


<210> 638
<211> 94
<212> DNA
<213> Mycobacterium tuberculosis

<400> 638
ctaagctttc gggtccgccg ccactagtac cgcgttgccg gccccgccga cctagaatgt 60
tccgcccatt gccgtttcct cccgccgccg ggtt 94


<210> 639
<211> 122
<212> DNA
<213> Mycobacterium tuberculosis

<400> 639
tctggtgccg ggtgtgccga cgggtccgtc cgcctctgct tcagtgattc tgtgatgcga 60
ccggcaacgt cctcgttgtt cggtgtctat gtggtccgtc tctccttgtt ccgcatacga 120
tt 122


<210> 640
<211> 210
<212> DNA
<213> Mycobacterium tuberculosis

<220>
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<222> (8)
<223> a, t, c or g

<220>
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<222> (10)
<223> a, t, c or g

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<220>
<221> modified_base
<222> (139)
<223> a, t, c or g

<220>
<221> modified_base
<222> (150)..(151)
<223> a, t, c or g

<400> 640
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agaactggcg ctgctgccac ctggtcggcg catcggcact tcgaggactg gatttcgacg 120
cgtggcccga cctgangtng gcggtggacn ngtgtgcacc cggttgattc ctcggccttg 180
ccgggatgcc acctgcgcct ggtggtcgat                                  210
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<210> 641
<211> 328
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (285)
<223> a, t, c or g

<400> 641
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agtataaagc gggcctgttg ccggaagata aagtcaaagc ggtgaccgag ctgaatcaac 120
atgcgccgct ggcgatggtc ggtgacggta ttaacgaccg ccagcgatga aagctgccgc 180
catcgggatt gcaatgggta gcggcacaga ctggcgctgg aaaccgccga cgcacattaa 240
ccataaccac ctgcgcggct ggtgcaaatg attgaactgg cacgnccact cacgccaata 300
tccgccagaa catcactatt gcgctggg                                    328
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<210> 642
<211> 553
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (236)
<223> a, t, c or g

<220>
<221> modified_base
<222> (251)
<223> a, t, c or g

<220>
<221> modified_base
<222> (473)
<223> a, t, c or g

<400> 642
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gtcggccggc cgggtgcggg cacaatcgcc gagttcggcg aacagatcct cgaaggtctt 120
cacggccagc gattgttgca cgtgtcagcc agccaagtca cggtggtttg acgccacacg 180
ttcgccaccg ccgcgccgcg cattagggca tcctaatata ggttaggcta ccctanttat 240
tcctgtggtc naaggaggca gccgaacgtg accttcccga tgtggttcgc agttccgccg 300
gaagtgccgt cagcatggct gtccgaccgg atgggccccg gtccgctgct ggccgcggcc 360
agggcgtggc acgcgctggc cgcgcaatac accgaaattg caacggaact cgcaagcgtg 420
ctcgctgcgg tgcaggcaac tcgtggcagg ggcccagcgc cgacggttcg tcntcccat 480
caaccgttcc gtattggcta accacctgca cggtggcacc gcacaacgcc gccacaaacg 540
cgccccggta tac                                                    553
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<210> 643
<211> 486
<212> DNA
<213> Mycobacterium tuberculosis

<400> 643
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gcacatggtg ggccggattc aacgcaacaa agccgggtcg ctggctcgct gggcgcacac 120
cgctcactcg gtggacagct cgcggttggt gaccgcgctg gatcgggcgg ttgttgcggc 180
gctggccgaa caccgtcgtg gcgagcggct gcgggtttac gtccaggtca gcctcgacgg 240
tgacggatcc cggggcggcg tcgacagcac gacgcccggc gccgtagacc ggatttgcgc 300
gcaggtgcag gagtcagagg gcctcgaact ggtcgggttg atgggcattc cgccgctgga 360
ttgggacccg acgaagcctt tgaccggctg caatcggagc acaaccgggt gcgtgcgatg 420
ttcccgcacg cgatcggtct gtcgcgggca tgtccaacaa cttgaaatcc cgtcaacatg 480
gtcgac                                                             486


<210> 644
<211> 146
<212> DNA
<213> Mycobacterium tuberculosis

<400> 644
gcttcccctg atactcgacc agccccactc gggccaatac gtgaatgtcc tagcattttt 60
cacccgttca cgggctagtc gagtagtaga cgattgatta gcctgaacgt acctccgacg 120
gccagctgac gaacgggttt gacgga                                        146


<210> 645
<211> 204
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (50)..(51)
<223> a, t, c or g

<220>
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<222> (55)
<223> a, t, c or g

<220>
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<222> (66)
<223> a, t, c or g

<220>
<221> modified_base
<222> (70)
<223> a, t, c or g

<220>
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<222> (75)
<223> a, t, c or g

<220>
<221> modified_base
<222> (77)
<223> a, t, c or g
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<220>
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<222> (88)
<223> a, t, c or g

<220>
<221> modified_base
<222> (90)..(93)
<223> a, t, c or g

<220>
<221> modified_base
<222> (101)
<223> a, t, c or g

<220>
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<222> (109)
<223> a, t, c or g

<220>
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<222> (116)
<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
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<222> (142)
<223> a, t, c or g

<220>
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<222> (145)
<223> a, t, c or g

<220>
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<222> (148)
<223> a, t, c or g

<220>
<221> modified_base
<222> (152)
<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
<221> modified_base
<222> (173)..(174)
<223> a, t, c or g

<220>
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<222> (178)..(180)

<223> a, t, c or g

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actatncagn ccatnangat gcggttcngn nnntgcagag natcctggna cacatncggt 120
tcacgttaat cancatcgcg anttnctncg tnttcgatta nttctgctaa cgnntctnnn 180
agtgcctgcg ggtcgactct agag 204

<210> 646
<211> 209
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
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<223> a, t, c or g

<220>
<221> modified_base
<222> (55)
<223> a, t, c or g

<220>
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<222> (64)
<223> a, t, c or g

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<223> a, t, c or g

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<223> a, t, c or g

<220>
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<223> a, t, c or g

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<223> a, t, c or g

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<222> (153)
<223> a, t, c or g

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<223> a, t, c or g

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<223> a, t, c or g

<220>
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<222> (198)
<223> a, t, c or g

<220>
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<222> (200)
<223> a, t, c or g

<220>
<221> modified_base
<222> (207)
<223> a, t, c or g

<220>
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<222> (209)
<223> a, t, c or g

<400> 646
nctctgccgg gcnagagcgc agagtcggac ggcttcgtcg atcgtgaagc gaccntgcga 60
tgancagata tcgntnacac tgctcanaaa cttcggatca tcgntgatac acaggccaac 120
gggtagcggt tgtccaaccg cttcgtcaac ganatgggat cgtgacganc ctacgctcgc 180
aggatatgtc gcngaccngn tctaganan 209

<210> 647
<211> 183
<212> DNA
<213> Mycobacterium tuberculosis

<220>
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<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<220>
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<222> (38)
<223> a, t, c or g

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<222> (56)
<223> a, t, c or g

<220>
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<220>
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<223> a, t, c or g

<220>
<221> modified_base
<222> (143)
<223> a, t, c or g

<220>
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<222> (154)
<223> a, t, c or g

<220>
<221> modified_base
<222> (169)..(170)
<223> a, t, c or g

<220>
<221> modified_base
<222> (178)
<223> a, t, c or g

<400> 647
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cgtatcactc cggcngacta nccgtatcng cgtcccgcac cggtcaactg gtctagccac 120
accgggggaga atncncgacc ggngctatcg accnatcacg gcttgtcgnn aagatagnca 180
gcc   183

<210> 648
<211> 154
<212> DNA
<213> Mycobacterium tuberculosis

<400> 648
atactcaagc ttgccaaccg ccaccctgca tccgggggggc gagcactgct ccgccgacca 60
gtacgaacca acctgcggtg cccaggccat tgacaatgtg ctggtcggcg cccgcgagtt 120
ctagcacagc aacgccgcgg ccaccacagg ggcg   154

<210> 649
<211> 219
<212> DNA
<213> Mycobacterium tuberculosis

<400> 649
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attcgctgga gcggtggctg tccaagatca ccctcgccca gacctgctac gggcacttct 120
acatcgagca caaccgtggc catcacgtcc gggtgtccac accggaagac ccggcgtcgg 180
cgcggttcgg caaaactttg tgggatttcc cgcccccc 219

<210> 650
<211> 307
<212> DNA
<213> Mycobacterium tuberculosis

<400> 650
aatactcaag cttcgcggag gtggtggggc aggagcacgt caccgcgccg ctgtcggtgg 60
cgctggatgc cggccggatc aaccacgcgt acctgttctc tgggccgcgt ggctgcggaa 120
agacgtcgtc agcgcgtatc ctggcgcggt cgttgaactg tgcgcagggc cctaccgcca 180
acccgtgcgg ggtctgcgaa tcctgcgttt cgttggcgcc caacgccccc ggcagcatcg 240
acgtggtaga gctggatgcc gccagccacg gcggcgtgga gcaaccccgc gagctgcggg 300
accgccc 307

<210> 651
<211> 252
<212> DNA
<213> Mycobacterium tuberculosis

<400> 651
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cctggtctcg ttcggcaata actcgttcgg cgtgcaggac gcggcgcaaa cgtacttcgg 120
catcaacgcg tccgacctga aattggcagc aaaccggcgc tgctgggccg ggcatggtgc 180
aatccgaaca agcacgctca acccgtacac caaccccgaa gggccgctgg cccggcggaa 240
ccttgtcctc ca 252

<210> 652
<211> 402
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (207)
<223> a, t, c or g

<220>
<221> modified_base
<222> (232)
<223> a, t, c or g

<220>
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<222> (316)
<223> a, t, c or g

<220>
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<222> (322)
<223> a, t, c or g

<220>
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<222> (324)
<223> a, t, c or g

<220>
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<222> (330)
<223> a, t, c or g

<220>
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<222> (342)
<223> a, t, c or g

<220>
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<223> a, t, c or g

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<222> (365)
<223> a, t, c or g

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<222> (370)
<223> a, t, c or g

<220>
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<222> (390)
<223> a, t, c or g

<400> 652
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ctgggcgtcg tggtgcccgg cctgccggtg caggaactgg attttactgc catctctcgc 120
gaccctgagg tggtccaggc ttacaacacc gacccactcg tgcaccacgg acgggttccg 180
gccgggattg gccgcgcgct gctgcangtg ggcgagacca tgccgcggcg ancaccggca 240
ttgaccgcgc cgctgctagt gctgcacggc accgatgacc ggctgatccc catcgaaggc 300
agccgtcgcc tggtcnaatg tntnggatcn gccgacgtgc anctgaanga ntatccccgg 360
ctgtnccacn aggtgttcaa cgaaccggan cgcaaccaag tg 402

<210> 653
<211> 429
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (181)
<223> a, t, c or g

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<220>
<221> modified_base

<222> (379)
<223> a, t, c or g

<400> 653
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ccacgggtcc gtgcaggaga cgtggctggc catgcaaagc gccgccgcct tatcaggaac 120
gccccggctt gtcggctttt cctgcatcga cacatttccg gaggtgttgt ggttggcgca 180
ncgcgcgaga caggcctggg atggcgtgcg catcgtcatc gggaatgcga tggcaacact 240
gaactacgag cgcatcctgc gccagcatga ctgtttcgac tacgtcgtcg ttggcgacgg 300
ggangtagcg ttcaccaagc tggccttggc cctggcgaat gacctgcggt tgacgactcc 360
cgggactaac ccgccgtant gagcaaggac agattctgcg cacaccctcc tcgctggtcg 420
accttgaca   429

<210> 654
<211> 353
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (109)
<223> a, t, c or g

<220>
<221> modified_base
<222> (151)
<223> a, t, c or g

<220>
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<222> (208)
<223> a, t, c or g

<220>
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<222> (247)
<223> a, t, c or g

<220>
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<222> (265)
<223> a, t, c or g

<220>
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<222> (300)
<223> a, t, c or g

<220>
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<222> (307)
<223> a, t, c or g

<220>
<221> modified_base
<222> (345)
<223> a, t, c or g

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gccggtgatc tgggtggcca actcggcggg caccatctcc atcacgacng caaacgctcc 120
ggcttcggcg acagcgatcg cgtctgcgat ngtttgttcg cggcgtctc cgcggccctg 180

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cacccggaag ccgcccaagg tgttgacnct ttgcggggtg aagccgatgt gtgccatcac 240
cgggatnccc gccgcggtca gacangcgat ttgctcggcc acccgctcac cgccctcgan 300
cttgacngca tgtgcgccgc cgtccttgaa gaaaccggtg gcggnggcaa ccc        353
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<210> 655
<211> 464
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (435)
<223> a, t, c or g

<400> 655
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actcgttgag cttggccagc gcgtcgtcgg ccggatcagc cagcacattc gcggccagga 120
cgccggagga gacggtgaag ctcgcaaaga aacctatggc ggaccgcatg attacacgcg 180
cgatcaacca cctctggtcg agcctcaaaa tttgcttcct taaacgggcc atcgacggat 240
gacgtcgagc tggtttaggt ctcaaacagg ttacgaaacg atctcggaat tgtccaaaag 300
gggaagttaa gaaaatggat agatttctac catttcgctg tggacgatcg tacttctgct 360
atagggctcc aggggcatcg acacgcaacg accttacgcg acaccggatc cgcgctggcg 420
gcggaacggc accangcgca accgaagggc caatccgaca tcgg                  464
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<210> 656
<211> 515
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (140)
<223> a, t, c or g

<220>
<221> modified_base
<222> (257)
<223> a, t, c or g

<400> 656
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gcctggctca cttcaactac aacaaccgca aacaattgcc gccttcggat ccgagttcgg 120
ttgggtacgc ggcaatggan caccatttct cggtgaatca gactattcct gagtacttga 180
tcatccactc tgcacacgac ctgcgaaccc cgcgcggcct tgccgacctg gagcagctgg 240
cgcaacgtgt gagccanatc ccaggcgttg ccatggttcg cggtgtgacc ggccaaacg 300
gggaaaccct tgaacaggcc cgggcgacat accaagccgg ccaagttggc aaccggctgg 360
gcggcgcgtc gcgaatgatc gatgagcgca ccggcgacct gaatcggctg gcatcgggtg 420
ccaacctgtt ggccgacaat ctcggtgact tcgcggtcaa gtcagccggg ccgttgcggg 480
tgtccgcagc cttgtccagc ccctcgctta ctcca                           515
```

<210> 657
<211> 403
<212> DNA
<213> Mycobacterium tuberculosis

<400> 657
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gaagtctggc ccgatacgga tctgaccgaa gtcgctgcgg tgcagcccac cctcattggc 120
gatggcgccg acgatggcgc ctggaccgat cttgtccgc ttgccgacgg cgacgcggta 180
ggtggtcaag tccggtctac gcttgggcct ttgcggacgg tcccgacgct ggtcgcggtt 240
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```
gcgccgcgaa agcggcgggt cgggtgccat caggaatgcc tcaccgccgc ggcactgcac 300
ggccagtgcc cgcggcgatt cagccatcgg gacatcatgc tcgcttcata ctcctcgacc 360
agtcggcgga acagctcgat tcccggaacg cccacgcatg gtg             403
```

<210> 658
<211> 444
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (296)
<223> a, t, c or g

<220>
<221> modified_base
<222> (314)
<223> a, t, c or g

<220>
<221> modified_base
<222> (367)
<223> a, t, c or g

<220>
<221> modified_base
<222> (377)
<223> a, t, c or g

<220>
<221> modified_base
<222> (394)
<223> a, t, c or g

<220>
<221> modified_base
<222> (410)
<223> a, t, c or g

<400> 658
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aacagctatg accatgatta cgccaagcta tttaggtgac actatagaat actcaagctt 60
gtagaaaaag atcggtgagc gcatcgattc gctccgccgg gtttgccgct gcggcggcgg 120
agctgccgtg accgtctatt tgggtgatca gatactgggc tagttcggtc ggggtggggt 180
gatcgaagat cgcggtggcc ggcagcgtta ctgcggtgac agctgttaag cggttacgta 240
tctccacggc actcaaggaa ttaaatcccg aatcggcaaa cgcctggcca gcgtcnagtc 300
cggcagcgcc gtcncgcccc agcaccgctg cggcatgctc acataccacc tcgatcgctg 360
cggcganttg ctcgtcngcc gaccgaccgg ccanccgggc ggcaaacccn gaagacccaa 420
gaattcatca ccaccatcgc tagc                                     444
```

<210> 659
<211> 437
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (188)
<223> a, t, c or g

<220>
<221> modified_base

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<220>
<221> modified_base
<222> (257)
<223> a, t, c or g

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

<220>
<221> modified_base
<222> (287)
<223> a, t, c or g

<220>
<221> modified_base
<222> (312)
<223> a, t, c or g

<220>
<221> modified_base
<222> (322)
<223> a, t, c or g

<220>
<221> modified_base
<222> (349)
<223> a, t, c or g

<400> 659
ccttcttgac acccacctcg ccatcgacct tgagcactcc gtcgtagttg gtgaacatgt 60
gaccggcgat cgggcgggtg aacgcgtact gggtgtcggt gtcgacgttc atcttcacca 120
cgccgtagcg cagcgcctcc tcgatctccg acttaagcga acccgagccg ccgtggaaca 180
cgaaatcnaa cggcttggcg tcngccggca gtccgagctt ggccgccgcc acctgttgcc 240
cttgcgcaag gatgtcnggg cgaancttga cgttgccggg cttgtanacg ccatgcacgt 300
tgccgaacgt cncggccagc angtatttgc cgtgctcacc ggcgcccanc gcctcgatgg 360
ttttctcgaa gtcctccggg ctggtgtaca gcttctcgtt gatctcgttc gccacgccgt 420
cctcttcgcc gccgacg 437

<210> 660
<211> 422
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (132)
<223> a, t, c or g

<220>
<221> modified_base
<222> (195)
<223> a, t, c or g

<220>
<221> modified_base
<222> (216)
<223> a, t, c or g

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<220>
<221> modified_base
<222> (219)
<223> a, t, c or g

<220>
<221> modified_base
<222> (237)
<223> a, t, c or g

<220>
<221> modified_base
<222> (279)
<223> a, t, c or g

<220>
<221> modified_base
<222> (297)
<223> a, t, c or g

<220>
<221> modified_base
<222> (303)
<223> a, t, c or g

<220>
<221> modified_base
<222> (335)
<223> a, t, c or g

<220>
<221> modified_base
<222> (356)
<223> a, t, c or g

<220>
<221> modified_base
<222> (366)
<223> a, t, c or g

<220>
<221> modified_base
<222> (395)
<223> a, t, c or g

<220>
<221> modified_base
<222> (410)
<223> a, t, c or g

<220>
<221> modified_base
<222> (414)
<223> a, t, c or g

<400> 660
aacagctatg accatgatta cgccaagcta tttaggtgac actatagaat actcaagctt 60
ggaaaggaga tccccgggaa cctggtggca accccgccat tggggttgtt gggattgccg 120
atcagcgtga angaaagctc gtctggagac agcgggtcgg ccgaagccgc aagattggcc 180
atcactagtg acganatcgt ggcgctctgc gagtanccna agacagtgac gttgttnccg 240
gcggcaattt gctgccgaat cgcactttcg agaatgacng caccctgcgc caccgangaa 300
tcnaaagtga ggttcttgat cacgaccacc gggtngagcc cttggggcgt gaagancgcc 360
```

```
tgcgcnataa cacccgggac gctgccactc atgtncagcg cgttcgcgan ctcnacatat 420
ct                                                                 422
```

```
<210> 661
<211> 412
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (14)
<223> a, t, c or g

<220>
<221> modified_base
<222> (70)
<223> a, t, c or g

<220>
<221> modified_base
<222> (269)
<223> a, t, c or g

<400> 661
tcctggtgat cganggccgc ggttccggcc gaaaatccgg ttcgggttcg ggtcgcggtt 60
ccaacttgan cgcggtccgc agctgattca ccgtggcaac gccggccaac tgcgcataat 120
gcgcatccga accctcaccc gcccgccccg cgatcacccc aacctgatcc aacgacaacc 180
gcccctcccg catacccgg gcgcagcgcg gaaactccgg caaccgccgc gccaccgtgg 240
cgatcgtgtg ggcgttgcct gacgaacanc ccatcttcca ggccaccaac cccgccaccg 300
accgcgcccc cgtcacaccc cacaacccgt cgcgatccag ctcagccacg atctccacaa 360
tgcgcccatc aatcgcattg cgctgaacgg gcaactccgc caactcctcc aa          412
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<210> 662
<211> 467
<212> DNA
<213> Mycobacterium tuberculosis

<400> 662
aacagctatg accatgatta cgccaagcta tttaggtgac actatagaat actcaagatc 60
tggtacccat ccgtgataca ttgaggctgt tccctggggg tcgttacctt ccacgagcaa 120
aacacgtagc cccttcagag ccagatcctg agcaagatga acagaaactg aggttttgta 180
aacgccacct ttatgggcag caacccgat caccggtgga aatacgtctt cagcacgtcg 240
caatcgcgta ccaaacacat cacgcatatg attaatttgt tcaattgtat aaccaacacg 300
ttgctcaacc cgtcctcgaa tttccatatc cgggtgcggt agtcgccctg ctttctcggc 360
atctctgata gcctgagaag aaaccccaac taaatccgct gcttcaccta ttctccagcg 420
ccgggttatt ttcctcgctt ccgggctgtc atcattaaac tgtgcaa              467
```

```
<210> 663
<211> 452
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (62)
<223> a, t, c or g

<220>
<221> modified_base
<222> (97)
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<223> a, t, c or g

<220>
<221> modified_base
<222> (147)
<223> a, t, c or g

<220>
<221> modified_base
<222> (189)
<223> a, t, c or g

<220>
<221> modified_base
<222> (200)
<223> a, t, c or g

<220>
<221> modified_base
<222> (202)
<223> a, t, c or g

<220>
<221> modified_base
<222> (210)..(211)
<223> a, t, c or g

<220>
<221> modified_base
<222> (223)
<223> a, t, c or g

<220>
<221> modified_base
<222> (226)
<223> a, t, c or g

<220>
<221> modified_base
<222> (228)
<223> a, t, c or g

<220>
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<220>
<221> modified_base
<222> (244)
<223> a, t, c or g

<220>
<221> modified_base
<222> (268)
<223> a, t, c or g

<220>
<221> modified_base
<222> (279)
<223> a, t, c or g

<220>

<221> modified_base
<222> (297)
<223> a, t, c or g

<220>
<221> modified_base
<222> (325)
<223> a, t, c or g

<220>
<221> modified_base
<222> (336)
<223> a, t, c or g

<220>
<221> modified_base
<222> (340)
<223> a, t, c or g

<220>
<221> modified_base
<222> (344)
<223> a, t, c or g

<220>
<221> modified_base
<222> (350)
<223> a, t, c or g

<220>
<221> modified_base
<222> (388)
<223> a, t, c or g

<220>
<221> modified_base
<222> (419)
<223> a, t, c or g

<220>
<221> modified_base
<222> (427)
<223> a, t, c or g

<220>
<221> modified_base
<222> (434)
<223> a, t, c or g

<220>
<221> modified_base
<222> (448)
<223> a, t, c or g

<400> 663
aacagctatg accatgatta cgccaagcta tttaggtgac actatagaat actcaagctt 60
ancgccacct cccgggcgga actccacggc gtggatnaag gtaccggccg ggatgttgcg 120
caatggcagg ttgttgcccg gcttgangtc cgcgttagcg ccggattcca ccacatcccc 180
ttgcgaaant ccgttgggtn cnatgatgtn ncgcttctcc ccntcnanat aatggancaa 240
cgcnatccgt gcggtacggt tcgggtcnta ctccatgtnc gcgaccttgg cgttganacc 300
atctttgtca ttgcggcgaa agtcnatcat ccggtnagcn cgcntatgan cgccgccttt 360
gtgccgggtg gtaatccggc catgcgcntt gcgtccaccg cgaacgtgca acgggggcnc 420
caacganttc tccngggttg aaccggtnat ct 452

<210> 664
<211> 93
<212> DNA
<213> Mycobacterium tuberculosis

<400> 664
tgtgtgtggt ggtaacccat ctgagcagtg tgccaaaccg gggcagccag ctcccaattg 60
acgtgagccc gctcacttgc tgggtaagcg tcg 93

<210> 665
<211> 352
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (47)
<223> a, t, c or g

<220>
<221> modified_base
<222> (67)
<223> a, t, c or g

<220>
<221> modified_base
<222> (70)
<223> a, t, c or g

<220>
<221> modified_base
<222> (100)
<223> a, t, c or g

<220>
<221> modified_base
<222> (118)
<223> a, t, c or g

<220>
<221> modified_base
<222> (137)
<223> a, t, c or g

<220>
<221> modified_base
<222> (171)
<223> a, t, c or g

<220>
<221> modified_base
<222> (175)
<223> a, t, c or g

<220>
<221> modified_base
<222> (182)
<223> a, t, c or g

<220>

<221> modified_base
<222> (188)
<223> a, t, c or g

<220>
<221> modified_base
<222> (193)
<223> a, t, c or g

<220>
<221> modified_base
<222> (218)
<223> a, t, c or g

<220>
<221> modified_base
<222> (221)
<223> a, t, c or g

<220>
<221> modified_base
<222> (231)
<223> a, t, c or g

<220>
<221> modified_base
<222> (250)
<223> a, t, c or g

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

<220>
<221> modified_base
<222> (271)..(272)
<223> a, t, c or g

<220>
<221> modified_base
<222> (278)
<223> a, t, c or g

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<220>
<221> modified_base
<222> (306)
<223> a, t, c or g

<220>
<221> modified_base
<222> (312)
<223> a, t, c or g

<220>
<221> modified_base
<222> (324)
<223> a, t, c or g

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<220>
<221> modified_base
<222> (342)
<223> a, t, c or g

<400> 665
aacagctatg accatgatta cgccaagcta tttaggtgac actatanaat actcaagctt 60
gcgggtnatn gccttggtca acggcaccgt gatcggatcn gggtctaccg cacacatnga 120
ctggagcttc ggcgaantca tcgcctatgc ctcgcggggg gtgacgctga ncccnggtga 180
cntgttcngc tcnggcacgg tgcccacctg cacgctcntc naacacctca ngccaccgga 240
atcattcccn ggctggctgc acganagcga nnttgtcncc ctccaagtct aaaggctggg 300
cgananaagc anaacgtccc gacnaacggc actccttttc cntttgctct tc          352
```

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<210> 666
<211> 448
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (232)
<223> a, t, c or g

<220>
<221> modified_base
<222> (289)
<223> a, t, c or g

<220>
<221> modified_base
<222> (353)
<223> a, t, c or g

<220>
<221> modified_base
<222> (390)
<223> a, t, c or g

<400> 666
gaaatcattg atggtttgag tcaccaggcc gatcaagcct tcgccgagcc aaattccaat 60
caagaggccc aagcccgtac caatcagccc ggcaacgagg gattccgtca ttatcagcca 120
aaataactgc tctcgggtta cacccaaaca gcgcaatatg gcgaaaaacg gtcgccgttg 180
cacgacatta aatgtcacgg tattgtagat taaaaagata cccaccaaca angcaatcaa 240
actgagagcg gttaaattga ccgtaaaagc gtccgtcatc tgtttgacng tgtcccgttg 300
ggtatccgac gtttccatac gcacaccggc cggcagtctt tgttggatgc gtnttgcaat 360
ggcctcatct ttgatgatca aatcgatgtn gctcagtctt ccgggcatat ggaacaactc 420
ttgggccgtg gaaatatcag caatgata                                     448
```

```
<210> 667
<211> 386
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (242)
<223> a, t, c or g

<400> 667
ctttcgccca ggccggcgcg gatgtcctca tcgcttcacg aacatcatcc gagcttgacg 60
```

```
ctgtcgccga acagatccgc gctgccggcc gccgcgccca caccgttgcc gccgatctgg 120
cccatcccga ggtgaccgcg cagctggctg gtcaggccgt cggagctttc gggaagctcg 180
acatcgtcgt caacaacgtt ggcggcacca tgcccaacac gctgctaagc acctcgacca 240
angacctcgc ggacgccttc gccttcaacg tgggcaccgc ccacgcgctg accgtcgcgg 300
cggtgccgtt gatgctggaa cactccggcg gcggcagcgt gatcaacatc agctccacca 360
tgggccggct ggcggcgcgg ggtttc                                      386
```

```
<210> 668
<211> 378
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (153)
<223> a, t, c or g

<220>
<221> modified_base
<222> (168)
<223> a, t, c or g

<220>
<221> modified_base
<222> (267)
<223> a, t, c or g

<220>
<221> modified_base
<222> (302)
<223> a, t, c or g

<400> 668
tgtgggctcc gatccggcgc gcatggcatc gacggcgacg ccgatcgatg acggccaggc 60
ttacgagctt gagggtgtga agttgtggac caccaacggt gtggtagcgg acctgctagt 120
ggttatggcg cgggtaccgc gcagtgaagg gcnccgaggg ggaatcancg cctttgtcgt 180
cgaggctgat tcgcccggga tcaccgtgga gcggcgcaac aagttcatgg gactgcgtgg 240
catcgaaaac ggcgtgaccc ggcttcntcg cgtcagggtg cccaaagaca acttgatcgc 300
anggaagcga cggtctgaag atcgcgctga ccacactcaa cgccggacgg ctgtccctac 360
cggcgatcca accggagt                                                378
```

```
<210> 669
<211> 344
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (285)
<223> a, t, c or g

<400> 669
gagctggccg agctggaccg gttcaccgcg gaactaccgt tctcgctcga cgactttcag 60
cagcgggctt gcagcgcgct ggaacgcggc cacggtgtgc tggtgtgcgc gccgaccggc 120
gctggcaaga cagtggtcgg cgagttcgcc gtgcacctgg cgctggcggc cggcagtaaa 180
tgtttctaca ccacgccgct gaaagccctg agcaaccaaa agcacaccga tctcacagca 240
cgctacggcc gtgaccagat ctggctgctg accggtgacc tgtcngtcaa cggcaaccgc 300
cggtggtggt gatgaccacc gaaatgctgc gcaacatgct ctac                  344
```

```
<210> 670
```

<211> 411
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (134)
<223> a, t, c or g

<220>
<221> modified_base
<222> (179)
<223> a, t, c or g

<220>
<221> modified_base
<222> (183)
<223> a, t, c or g

<220>
<221> modified_base
<222> (188)
<223> a, t, c or g

<220>
<221> modified_base
<222> (215)
<223> a, t, c or g

<220>
<221> modified_base
<222> (218)
<223> a, t, c or g

<220>
<221> modified_base
<222> (271)
<223> a, t, c or g

<220>
<221> modified_base
<222> (332)
<223> a, t, c or g

<220>
<221> modified_base
<222> (396)
<223> a, t, c or g

<400> 670
gatctctgga tcggcggggc tctccgggcc ggcctcggcg acctcagcgg gccgcgcctt 60
ccggccgaac cattccctag ccatagatga ccgcacctcg atgcacggtt tggcggcaac 120
gcggcaaggc gtcngtcggg cccagccgcg gcaatgcggg tacccgggag cgcgggtcng 180
tanaccancg ctggactgcg tcgcgcggtg cgtcnacntc aaagtccccg gcgtcccata 240
tcgcgtatga cgcgggcgcg cccggcacca ngggtgccga tccggccgtc tcgaacacca 300
ccggcccgcc agccgccgcg ggtccggcag cnaacccgcc cgcgccgata cccgctgccc 360
gcgtgcgtga ttgaccgccg cgcgcacgct ggccanggat caaagcccgt g 411

<210> 671
<211> 473
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (147)
<223> a, t, c or g

<220>
<221> modified_base
<222> (247)
<223> a, t, c or g

<220>
<221> modified_base
<222> (380)
<223> a, t, c or g

<220>
<221> modified_base
<222> (457)
<223> a, t, c or g

<220>
<221> modified_base
<222> (468)
<223> a, t, c or g

<400> 671
```
ggacgcgtag cccgccaggc cggtcagggt gcccttccag tccacgccgc tgtggtcggc 60
gaaccgctta tcttcaatcg agacgatcgc cagcttcatc gtgttggcga tcttgtccga 120
gggcacctcg aaccggcgct gcgagtncag ccacgcgatc gtgttgccct tcgcgtcgac 180
catcgtcgat accgcaggca cttgcccctc gagcagctgg gccgagccgt tggcaacgac 240
ctcagangca cgattggaca tcagccctag cccgcctgcg aacgggaacg tcagcgcagt 300
ggcgacgaca ctggccaaca dacagcaccc agccagcttc agaacggtga tcgcggccgg 360
gaagcgctcg ggcatgcgtn ctacagtagc gacctcctgt cactccacgt gccgctcggt 420
ccaatagaat ctttccgcgg gcgggtgaat ctctgcngga tcggggcngg cgc    473
```

<210> 672
<211> 357
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (151)
<223> a, t, c or g

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<220>
<221> modified_base
<222> (242)
<223> a, t, c or g

<220>
<221> modified_base
<222> (247)..(248)
<223> a, t, c or g

<220>

<221> modified_base
<222> (293)
<223> a, t, c or g

<400> 672
gctcgttgcc ggcggcgatc tcgtcgagct cgtcttccat cgccgcggtg aagtcgtagt 60
cgacgagccg accgaaatgc tgctcgagca gaccggttac cgcgaacgcc acccatgacg 120
gcaccagtgc actgcccttc ttgtgcacgt ngccgcgatc ctggatggtc ttgatgatcg 180
acgantaggt cgacgggcgg ccgatgccca gctcctcgag cgctttgacc agcgacgcct 240
cngtgtnncg ggccggcggg ttggtggcat ggccgtctgg ggtcaactcg acnatgtcca 300
accgttgacc cggggtcaga tggggcagtc gccgctcggc atcgtcagcc tcgccgc   357

<210> 673
<211> 402
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (222)
<223> a, t, c or g

<220>
<221> modified_base
<222> (227)
<223> a, t, c or g

<220>
<221> modified_base
<222> (240)
<223> a, t, c or g

<220>
<221> modified_base
<222> (247)
<223> a, t, c or g

<220>
<221> modified_base
<222> (270)
<223> a, t, c or g

<220>
<221> modified_base
<222> (369)
<223> a, t, c or g

<400> 673
gtctttcgat ggctgcttct tcggcgctga cgctggcgat ctatcacccc cagcagttcg 60
tctacgcggg agcgatgtcg ggcctgttgg acccctccca ggcgatgggt cccaccctga 120
tcggcctggc gatgggtgac gctggcggct acaaggcctc cgacatgtgg ggcccgaagg 180
aggacccggc gtggcagcgc aacgacccgc tgttgaacgt cnggaanctg atcgccaacn 240
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tccaacanng ancaacgtgc acgggcggag tngtnccgcc acttcgncna tgacggggtc 180
gatccnttcg acgtccgtcg ccgcgtcggt cgagtggcgg tcacnctccn ngtactcgac 240
cncacngacg agaggactcg ancccatcta cgtgtggacg aaacanatct tctgtccnac 300
gactacacca ccacccaggc catcgccgnc gcccgcgang ccccttcgac gccntactgg 360
tccngnggng gcgctctccg gttgtctnnc ncntgncgtg ttccttcacn cactgcccna 420
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cgcgtgcctg tggctgatgc tgaacctcac cgcgttgact tggatccggt tcgggatctg 180
gctggtggcc ggaaccgcga tttatgtcng ctacgggcgc cggcactcgg cgcatggcct 240
tcggcaagcn cnananaacg cgacccggag gtgttgaact agcttcgccg cgtatttaca 300
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anggtgccct tccantccac gccgctgtgg tcggcgaacg ctnatcttca atcgagacca 180
tcgccagctt catcntgttg gcgatcttgt cnnacggcac ctcnaaccgg cgctnctagt 240
acnccacncn atcntgttnc cttcncgtcn acatcctcga tnccncntgc actttccctc 300
gancncctgg gccgagccgt tggcantnac ctcngagccc cattggacat cancccancc 360
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<210> 686
<211> 372
<212> DNA
<213> Mycobacterium tuberculosis

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gaccnaaatg ctgctcnagc agaccggtta ccnnnaacnc cncctcntga cngcaccagt 180
gcnctgccct tcttgtgcac gtacccgcna tcctggatgg tcttgatgat cnactantnt 240
gtcgacgggc ggccgatgcc catctcctcn agcgctttga ccagcgacnc ctcggtgtat 300
cgggccggcg ggttngtggc atggccgtct ggggtcanct cnacnatntt canccgttga 360
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<210> 687
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gcgactgtgg cctgancggc aagggtngcc tnattcntcc tcctgnggca tggttnccac 120
acggaatgnc ggtaagtctg gtcggcaacc tggcccgctg cgggttgggt tcggattcgc 180
tcggctanta aggtgctcgc ctggtgtnac nactaatcnc natatacnct tancgggagt 240
ngncgtcccg atcctngccc tgccgcnggc gatcncgttc gcancaccgc caccggaact 300
cncaangtgc gctcatcggg ctctacgcgc catcttcccc ggattcttcg cggcngngtn 360
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<212> DNA
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ccgagcgcgg tcacggtctt tgcaccggga cgacgcatac cggcagcgcg aacatcnccg 180
cgggctgcag cntgaacgtc caataccant cnaacagtgt ccgcgcgtna aaacccganc 240

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cggcggtcgc ttcngtaatc aacggctcct gcgcaaccag ctgcaagtcg ccggtgccac 300
cggcgttgac gatcttgatg tctgcganct cgcgcaccag ctcgacggcc cgggca     356
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<212> DNA
<213> Mycobacterium tuberculosis
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gagtattgag cgtatgtttt ggaataacag gcgcacgctt cattatctaa tctcccagcg 180
tggtttaatc agacgatcga aaatttcatt gcagacaggt tcccaaatag aaagagcatt 240
tctccaggca ccagttgaag agcgttgatc aatggcctgt tcaaaaacag ttctcatccg 300
gatctgacct ttaccaactt catccgtttc acgtacaaca ttttttagaa ccatgcttcc 360
ccaggcatcc cgaatttgct cctccatcca cggggactga gagccattac tattgctgta 420
tttggtaagc aaaatacgt                                              439
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<210> 690
<211> 442
<212> DNA
<213> Mycobacterium tuberculosis
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ccggtanaag gtcggcganc gctcngcatt ggtcatcggg atatgccgct cgggacggtc 180
anagccctcg ggtccggcca gcactccgca ggcttcgtcg gggtggtcgc gacgcgcatg 240
ggccaccatc gcattcacca ggtctgcgcg aatcaccagc acgtanacgg ttcctttcct 300
aagcaacacc gaantttcag gacccgaatg ctccgggaaa catgtcacgg taggtcggta 360
ttccggctac cggctganca ttgagcacgc cggccagcac cgcacgaacc aggcaatcag 420
ccgccgccgc acccgaccgc gg 442

<210> 691
<211> 365
<212> DNA
<213> Mycobacterium tuberculosis

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cgggtcgggc gccgggcccg ggccgccagg ctgctccgct cggtgatggc acgccaccgc 120
gacaccaccc ggctgcgcta cgtcgagcca taccgggcgg agctacatcg gctcggccgc 180
ccagtgttcg ggccctcttt cgaggtcgag gtcgataccg atttgcgcat ccgcagccgc 240
accctggacg acagaaccgt gccctacgaa ttgcttgtcg ggcggggcca aagaacagct 300
tggcatcctg gcgcgattgg ccggcgcggc gctggtcgcc aaggaagacc cgttccggtg 360
ctgat 365

<210> 692
<211> 307
<212> DNA
<213> Mycobacterium bovis

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accatctggc acaattgagc anttgtctnt cgcggtggtc ggncgggttg cgtgccgcct 180
gctgcganat gcaccantaa gcccgaaccc accggcttgg tgaccaccgc acgctgcgtg 240
tgggggggtaa ccactccgcg accccaagga tggtcatttc caatgaaccg gctggacttc 300
gtccana   307

<210> 693
<211> 414
<212> DNA
<213> Mycobacterium bovis

<400> 693
gtcgcggttc gatcgacccg atcttcacct cgtaacctcg atgcttagca ggatccagct 60
tgaccgcgtt tggctctacc cactctttga gtggcgccgt cgcctgtgcc ccatcggtgt 120
tcatgacgaa cgcttcgaaa gacttcctct tgtgagccgg aatgtctgcg taaagaagtt 180
ccatgtccgg gaagtagacc cggtcgccct ccacgtggta ctccttcgag gtccgcttct 240
cgccggatcc gataaacacc ggccccaggc accgcagcgt gagttcgaac ggcttcaggt 300
aggtgttcat gcggcggact ccgggagtgc gagaaatagc ggtcgcgcgt agctgtagac 360
cggatggttt ccgcccaggc tgacgtcgaa gatgcctcct tggaaggggc gcga   414

<210> 694
<211> 256
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (176)
<223> a, t, c or g

<400> 694
aactcaagtt tttacggtga tcgcgcatca cctggttcat gaactggaag cagcgcagcg 60
cttccttttc ggccgcaaca tgagccagcc tctcgtcggc ggtcgggtgc aggtgctcgg 120
gcagctcggc cgcgacagcc gcctgaccct gaaaccagct tccatatccc gcgacnaacg 180
acgccagtcc gctacgtaac ccctccgcga ctgtccatgg acaacagcgc gttctccacc 240
gaccgggccc gggtgt   256

<210> 695
<211> 328
<212> DNA
<213> Mycobacterium bovis

<220>

<221> modified_base
<222> (62)
<223> a, t, c or g

<400> 695
gtgcaggttt cgacaatgtg gtgccggttc ggcggctacg tgccatcgag acactggcgc 60
angctatcgc acccgttatc ggctgcgagc aaatcgcggt atgcgttctt gagcatgagt 120
cggcgaccgt cgtcatggtc gacacccacg acggaaagac gcagatcgcc gtcaagcatg 180
tgtgccgcgg attatcagga ctgacctcct ggctgaccgg catgtttggt cgcgatgcct 240
ggcgcccggc cggcgtggtc gtggtcggct cggatagcga ggtcagcgaa ttctcgtggc 300
agctcgaaag ggtcctgccg gtgccggt 328

<210> 696
<211> 278
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<220>
<221> modified_base
<222> (42)
<223> a, t, c or g

<400> 696
ttcgagtcat gcgcccgcct cgaccacgaa natgcacgtc gnggttcgat cgacccgatc 60
ttcacctcgt aacctcgatg cttagcagga tccagcttga ccgcgtttgg ctctacccac 120
tctttgagtg gcgccgtcgc ctgtgcccca tcggtgttca tgacgaacgc ttcgaaagac 180
ttcctcttgt gagccggaat gtctgcgtaa agaagttcca tgtccgggaa gtagacccgg 240
tcgccctcca cgtggtactc cttcgaggtc cgcttctc 278

<210> 697
<211> 264
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (257)
<223> a, t, c or g

<400> 697
gtcatgtgta ccatttgcgg gcgcttttcg acggccgcga aacaccggag atttcctgtg 60
atttcactgc atgcgtaccg tctggcacaa ttgagcagtt gtctgtcgcg gtggtcggcc 120
gggttgcgtg ccgcctgctg cgagatgcac caataagccc gaacccaccg gcttggtgac 180
caccgcacgc tgcgtgtggg gggtaaccac gccgcgaccc caaggatggt catttccaat 240
gaaccggctg gacttcntca acaa 264

<210> 698
<211> 169
<212> DNA
<213> Mycobacterium bovis

<400> 698
aacagcgcgg ttgaactgat aggtgcggcc cggctcgagc aggccgggcc atttgttcga 60
tgcggttacc gaaagatctc ttcggtgacc tgcccgccgc cggccagctc ggcccagtgc 120
ccggcgttgg ccgccgcggc gacgatcttg cgtccacgg tggtcgggg 169

<210> 699
<211> 256
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (151)
<223> a, t, c or g

<400> 699
gcatctgggc tggcggtggt tcgccgctcc gaagccgtcg aacaccatcg ccagcgcggc 60
ttccacatca acgaccattt cggccagctt gcggcgcatc agcggcttgt cgatgagcgc 120
cccaccgaat gcccgccgct gcccggcgta ncacagcgat tcgaccagcg cgcggcgcgc 180
gttgccgagg gcgaacgaag cggtgcccaa ccgcaatctg ttggtcagct ccatcatgcg 240
ggtgagtccc ttgccg   256

<210> 700
<211> 292
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (39)
<223> a, t, c or g

<220>
<221> modified_base
<222> (148)
<223> a, t, c or g

<220>
<221> modified_base
<222> (172)
<223> a, t, c or g

<400> 700
atcggttttcc agcaacagcc gatcgacggc ttcgcccang gccgctcccg ggcgacccga 60
ccattgctgt cgccgcgtaa cgccatcacg gatgacgcgc agttcgtcgc tgtctagctc 120
caccatcgcc tgcacaccgg cggccagnac ccattggccg tcgcactcgt anagcaggta 180
atcctcgtcg acggactcgg taaccaccgc cgccagctcc gctgccaggt cggcggggtt 240
gacaccggcg ggcatcggga tggacgacga cgcggtgctg acggcgcctg tc   292

<210> 701
<211> 315
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (13)
<223> a, t, c or g

<400> 701
agcggtttcc cangcgggat gtgctgtgag cgccgcacca ccagcgccga cgctaaggat 60
ggaacgcacg gcatcttctg acgcgtaacc gcgttgtgat cgcgagctga ggagacggta 120
tgggggaggg ttctcggagg ccatctggga tgttgatgtc tgtcgatctt gagccggtgc 180
aactcgtcgg cccggacggt acgccgacgg ccgaacgccg ctaccaccgt gaccttcctg 240

```
aggaaacgct gcgttggctc tacgagatga tggtggtcac ccgcgagctg gataccgaat 300
tcgtcaatct gcacg                                                  315
```

<210> 702
<211> 328
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (293)
<223> a, t, c or g

<400> 702
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caagcttcca caggtaggga tcgaggaaca gcgcgttgaa ctgataggtg cggcccggct 60
cgagcaggcc ggccatttgt tcgatgcggt taccgaaaat ctcttcggtg acctgcccgc 120
cgccggccag ctcggcccag tgcccggcgt tggccgccgc ggcaacgatc ttggcgtcca 180
cggtggtcgg ggtcatgccc gcgagcagga tcggcagcg gccggtcagc cgggtgaact 240
tcgtcgaaag cttgaccctg ccgtcgggga ggcgaaccac ggtcggtgcg tanctccacc 300
aagcccgggc aacctcgggg gtggcgcc                                    328
```

<210> 703
<211> 352
<212> DNA
<213> Mycobacterium bovis

<400> 703
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tggacctcat gacaacgcgg cggcgattac ccccgctacc gccagcagca tgacggcggt 60
agcgaacacc gccggatgca gcgcaggtgc gtcgatgtgc tcacggaatc gccccggcac 120
cgcgatctcg aggatcacca gtgccacccc ctgcagcgcg acaccgacga ttccgtacac 180
cgccacgccg atcaggccct gggccagctg gcgtatatgg cggcgatggt gacgatggcc 240
agcgccacat acattgtggc ggccagaacc acggcgttgg ggcggcggtc gatgaacact 300
aggcgacgca gatcgcccgg ggtcaacagg ttgaccatca gaaagcctgc ga         352
```

<210> 704
<211> 315
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (26)
<223> a, t, c or g

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<400> 704
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tttggtgcgg ccggcaatca acttcngctc ncagcggttt cccaggcggg atgtgctgtg 60
agcgccgcac caccagcgcc gacgctaagg atggaacgca cggcatcttc tgacgcgtaa 120
ccgcgttgtg atcgcgagct gaggagacgg tatgggggag ggttctcgga ggccatctgg 180
gatgttgatg tctgtcgatc ttgagccggt gcaactcgtc ggcccggacg gtacgccgac 240
ggccgaacgc cgctaccacc gtgaccttcc tgaggaaacg ctgcgttggc tctacgatat 300
gatggtggtc acccg                                                  315
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<210> 705
<211> 390

<212> DNA
<213> Mycobacterium bovis

<400> 705
cgcccagggc cgctcccggg cgacccgacc attgctgtcg ccgcgtaacg ccatcacgga 60
tgacgcgcag ttcgtcgctg tctagctcca ccatcgcctg cacaccggcg gccaggaccc 120
attggccgtc gcactcgtag agcaggtaat cctcgtcgac ggactcggta accaccgccg 180
ccagctccgc tgccaggtcg gcggggttga caccggcggg catcgggatg gacgacgacg 240
cggtgctgac ggcgcctgtc gcgacgctga gctcggacac agctagtaaa tgtagcctaa 300
cctacttaat gggtcgcagc cccccggggt cgtcgcatgt ccaacgttgc tcgactggaa 360
gaaaatgctc gtcggggagc aaatggcacc 390

<210> 706
<211> 322
<212> DNA
<213> Mycobacterium bovis

<400> 706
aatactcaat cttgatcggt ttccagcaac agccgatcga cggcttcgcc cagggccgct 60
cccgggcgac ccgaccattg ctgtcgccgc gtaacgccat cacggatgac gcgcagttcg 120
tcgctgtcta gctccaccat cgcctgcaca ccggcggcca ggacccattg gccgtcgcac 180
tcgtagagca ggtaatcctc gtcgacggac tcggtaacca ccgccgccag ctccgctgcc 240
aggtcggcgg ggttgacacc ggcgggcatc gggatggacg acgacgcggt gctgacggcg 300
cctgtcgcga ctctgagctc gg 322

<210> 707
<211> 398
<212> DNA
<213> Mycobacterium bovis

<400> 707
ggatgtgctg tgagcgccgc accaccagcg ccgacgctaa ggatggaacg cacggcatct 60
tctgacgcgt aaccgcgttg tgatcgcgag ctgaggagac ggtatggggg agggttctcg 120
gaggccatct gggatgttga tgtctgtcga tcttgagccg gtgcaactcg tcggcccgga 180
cggtacgccg acggccgaac gccgctacca ccgtgacctt cctgaggaaa cgctgcgttg 240
gctctacgag atgatggtgg tcacccgcga gctggatacc gaattcgtca atctgcagcg 300
ccagggggaa gctggcgttg tacacgccct gtcgcgggca ggaagccgcg caggtgggtg 360
cggcggcttg cctacgcaaa accgactggt tgttcccc 398

<210> 708
<211> 175
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (93)
<223> a, t, c or g

<400> 708
atcacgacaa cagcgacggt gtgtcggatc agcggccccc gttgccgggc aatgttgagg 60
cgtttctgcg tctggttgag gccggctggg acnccgaggt ggctcgtcgg ccacatgggc 120
agcacaccac cgtggtgatg catctagacg tgcaggaccg tgccgctggc ctgca 175

<210> 709
<211> 210
<212> DNA
<213> Mycobacterium bovis

<400> 709
gcggctacgt gccatcgaga cactggcgca ggctatcgca cccgttatcg gctgcgagca 60
aatcgcggta tgcgttcttg agcatgagtc ggcgaccgtc gtcatggtcg acacccacga 120
cggaaagacg cagatcgccg tcaagcatgt gtgccgcgga ttatcaggac tgacctcctg 180
gctgaccggc atgtttggtc gcgatgcctg 210

<210> 710
<211> 312
<212> DNA
<213> Mycobacterium bovis

<400> 710
tacaagcggc acctcgccgg tgaactgacc gttcgcacgc tgcgcaccgc cgccgggcgc 60
gtgctcggcg cgccggcggc ccccgaggcc tgagagggga accaaccatg caggtgaaca 120
tgacggtaaa cggcgagccc gtcaccgccg aggtcgaacc ccggatgctg ctggtccatt 180
ttctccgtga tcagctgcgg ctcaccggaa ctcactgggg ctgtgatacc agcaactgcg 240
ggacatgcgt ggtggaggtc gacggcgtgc cggtgaaatc ctgcacgatg ctcgccgtga 300
tggcctccgg gc 312

<210> 711
<211> 255
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (69)
<223> a, t, c or g

<220>
<221> modified_base
<222> (72)
<223> a, t, c or g

<220>
<221> modified_base
<222> (113)
<223> a, t, c or g

<220>
<221> modified_base
<222> (115)
<223> a, t, c or g

<220>
<221> modified_base
<222> (142)
<223> a, t, c or g

<220>
<221> modified_base
<222> (152)
<223> a, t, c or g

<220>
<221> modified_base
<222> (172)
<223> a, t, c or g

<220>
<221> modified_base

<222> (183)
<223> a, t, c or g

<220>
<221> modified_base
<222> (188)
<223> a, t, c or g

<220>
<221> modified_base
<222> (225)
<223> a, t, c or g

<220>
<221> modified_base
<222> (255)
<223> a, t, c or g

<400> 711
agcggctggt tacgactccc tgtttgtgat ggaccacttc taccaactgc ccatgttggg 60
gacgcccgnc cntccgatgc tggaagccta cactgccctt ggtgcgctgg ccncngcgac 120
cgagcggctg caactgggcg cnttggtgac cngcaatacc taccgcaccc cnaccctgct 180
ggncaaanat catcaccacg ctcgacttgg ttagcgccgg tcgancgatc ctcggcattg 240
gaaccggttg gtttn 255

<210> 712
<211> 304
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (272)
<223> a, t, c or g

<400> 712
acgcgcgccg atcatatctg ctatggatgt acaattcagc tcttgctgtt ataccagtat 60
atggtgtact atttgatcta tgctgacgtg tgagatgcgg gaatcggccc tggctcgact 120
cggccgggct ctggctgatc cgacgcggtg ccggattctg gtggcgttgc tggatggcgt 180
ttgctatccc ggccagctag ctgcgcacct cgggttgacc cgatcgaatg tgtccaacca 240
tctgtcgtgt ttgcggggct gcgggctggt antcccaacc tatgagggcc ggcaggttcg 300
gtat 304

<210> 713
<211> 352
<212> DNA
<213> Mycobacterium bovis

<400> 713
ccgcgctgct gctgacgtcg gtcgaacgtg cgacacgtct gcgaataccg gccgaacgct 60
gggtttatcc acaggctggc accgacgccc acgacacacc ggccgtcgcc gaccgccacc 120
gactgcatcg gtcgacggcc attcggatcg ccggtgcccg ggcgctggaa ctggctgggc 180
tggggctcga tgacatcgaa tacgtcgacc tgtattcgtg ctttccctcc gctgtccaag 240
tcgccgcaat cgaactcggc ctggacaccg acgatcctgc cgcccgctg accgtcaccg 300
ggggcctgac cttcgccggc gggccgtgga gcaattacgt cacgcactcc at 352

<210> 714
<211> 233
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<220>
<221> modified_base
<222> (105)
<223> a, t, c or g

<220>
<221> modified_base
<222> (171)
<223> a, t, c or g

<220>
<221> modified_base
<222> (208)
<223> a, t, c or g

<220>
<221> modified_base
<222> (220)
<223> a, t, c or g

<400> 714
caggcgtgca atgacctgca ctgcgccgga nantccctaa cccactaaac cggggccgct 60
cacaagccgt gcagctcggt cagcgtcagg tgcgcgacca ggaantaaat gagcagaccc 120
gtgccgtcaa cgatggtggc gatcatcggc cccgaaacga tggccgggtc natgcgcaac 180
ttcttcagca gcggcggaag gacggcancc accagcgacn accacaccac gat 233

<210> 715
<211> 336
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<400> 715
gcgaancact tcgtcaactt ccagggctgc ccgcaccaag tatttcgacg agtatttccg 60
tcgggccgcc gccgccggcg cgcggcaggt ggtcatcctg gcggcggggc tggactcgcg 120
cgcgtaccgg ctgccttggc ccgacgggac cacggttttt gagctggacc gcccgcaggt 180
ccttgatttc aagcgcgagg tgctcgccag ccacggtgcc caaccgcgcg ccctgcgccg 240
cgagatcgcc gtcgacctgc gtgacgattg gccacaagcc ttgcgggaca gtggtttcga 300
tgcggctgca ccgtcggcat ggattgccga agggct 336

<210> 716
<211> 273
<212> DNA
<213> Mycobacterium bovis

<220>

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<221> modified_base
<222> (7)
<223> a, t, c or g

<220>
<221> modified_base
<222> (14)
<223> a, t, c or g

<220>
<221> modified_base
<222> (20)
<223> a, t, c or g

<220>
<221> modified_base
<222> (54)
<223> a, t, c or g

<220>
<221> modified_base
<222> (67)
<223> a, t, c or g

<220>
<221> modified_base
<222> (72)
<223> a, t, c or g

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (115)
<223> a, t, c or g

<220>
<221> modified_base
<222> (150)
<223> a, t, c or g

<220>
<221> modified_base
<222> (167)
<223> a, t, c or g

<220>
<221> modified_base
<222> (223)
<223> a, t, c or g

<220>
<221> modified_base
<222> (234)
<223> a, t, c or g

<220>
<221> modified_base
<222> (244)
<223> a, t, c or g
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<400> 716
ttgggcnttg cccncaatan ggccccaatc aaaagccgag caggtggaac ctancgcatt 60
cgcctcntcg tntgtgcacc cgagccatcg cacgcgcggg aattcccgga tntcnccgta 120
ttctccggcg gccgggctaa cccatcccan gccgaacggt tggctcntgc cgtgggtccc 180
gtgttggccg atcggggcgt caccgggggg gctcgggtgc ggntgaccat ggcnaactgc 240
cccnatgggc cgaccctggt gcagataaac ctg 273

<210> 717
<211> 327
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (20)
<223> a, t, c or g

<220>
<221> modified_base
<222> (53)
<223> a, t, c or g

<220>
<221> modified_base
<222> (252)
<223> a, t, c or g

<400> 717
tggtggaggt ccccaccaan acccggccgt aactctgctc acggaaatgc ggncaggccg 60
cgcgtagcac gtggtatccg ccataaaggt gcaccttaag cacggcgtcc caattctcga 120
acgacatctt gtggaaggtg ccgtcgcgca agatcccggc gttgctcacc acaccgtgca 180
cggcgccgaa ttcgtcaagc gcggtcttga tgatgttcgc tgcgccgtcc tcggtggcga 240
cgctgtcggt anttggcgac cgcccggccc cccttgtcgc gaaatctcgg cgacgacctc 300
atcggccatc gccgaaccgg cgcccg 327

<210> 718
<211> 344
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (32)
<223> a, t, c or g

<220>
<221> modified_base
<222> (55)
<223> a, t, c or g

<220>
<221> modified_base
<222> (59)
<223> a, t, c or g

<220>
<221> modified_base
<222> (83)
<223> a, t, c or g

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<220>
<221> modified_base
<222> (146)
<223> a, t, c or g

<220>
<221> modified_base
<222> (189)
<223> a, t, c or g

<220>
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<222> (196)
<223> a, t, c or g

<220>
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<222> (198)
<223> a, t, c or g

<220>
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<222> (211)
<223> a, t, c or g

<220>
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<222> (231)
<223> a, t, c or g

<220>
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<222> (266)
<223> a, t, c or g

<220>
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<222> (269)
<223> a, t, c or g

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<222> (275)
<223> a, t, c or g

<220>
<221> modified_base
<222> (292)
<223> a, t, c or g

<400> 718
gccggccaaa ctggccggcg gggttgctgt cntcaaggtg ggttccgcca ccaanaccnc 60
actcaaggat cgcaaggaaa gcntcaagga tgcggtcgcg ccgccaagg ccgcggtcaa 120
ggagggcatc gtccctggtg ggggancctc cctcatccac caggcccgca aggcgctgac 180
cgaactgcnt gcgtcncnga ccggtgacaa ngtcctcggt gtccacgtgt nctccgaagc 240
ccttgccgct ccgttgttct ggatcnccnc caacnctggc ttggacggct cngtggtggt 300
caacaaggtc agcgagctac ccgccgggca tgggctgaac gtga              344


<210> 719
<211> 271
<212> DNA
<213> Mycobacterium bovis
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<220>
<221> modified_base
<222> (8)
<223> a, t, c or g

<220>
<221> modified_base
<222> (37)
<223> a, t, c or g

<220>
<221> modified_base
<222> (91)
<223> a, t, c or g

<220>
<221> modified_base
<222> (100)
<223> a, t, c or g

<220>
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<222> (121)
<223> a, t, c or g

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<220>
<221> modified_base
<222> (179)
<223> a, t, c or g

<220>
<221> modified_base
<222> (196)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<400> 719
cgaaccctnaa ttgtcctgta atgcccagct caccaangca tggctggtgg ccggggcggt 60
gaagccggcg tctgcggcac cgtccaactc natgtggatn gccggaatgg ggatgtccgg 120
nacggcgaat ccgtanttcg cttgtcccgt gaggcccagg tggatggggg gaaggatcnt 180
ggtgtccggg atgatnatgg ggccgatgcc gccggttgaa gtccactgga tcgggaattc 240
gggaatcgtg atnccgacgt tcaggccgaa c 271

<210> 720
<211> 302
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (29)
<223> a, t, c or g

<220>
<221> modified_base
<222> (167)
<223> a, t, c or g

<220>
<221> modified_base
<222> (219)
<223> a, t, c or g

<220>
<221> modified_base
<222> (264)
<223> a, t, c or g

<400> 720
ctaacggaat gaaagccctg gtggccgtnt cggcggtggc cgtcgtcgca ctgctcggtg 60
tatcttccgc ccaagctgat cccgaggcgg atcccggcgc aggtgaggcc aactatggtg 120
gcccccaag ttccccacgt cttgtcgatc acaccgaatg ggcgcantgg ggaattctgc 180
ccagcctccg ggtctacccg tcccaagttg ggcgtacanc ctcccgccgc ctcgggatgg 240
ccgctgccga cccggcctgg gccnaggttc tcgcgctgtc accggaagcc gacactgccg 300
gc   302

<210> 721
<211> 303
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (12)
<223> a, t, c or g

<220>
<221> modified_base
<222> (17)
<223> a, t, c or g

<220>
<221> modified_base
<222> (236)
<223> a, t, c or g

<400> 721
ccgcgggaca cncctcnatg ctgccgccat ggacgcggtc gaacgcaagc agctgatcga 60
gctacaacgc cgcgcggaac gcttccgccg cgggcgtgac cgcatcccgt tgaccgggcg 120
gatcgcggtg atcgtcgatg acggcatcgc caccggagcg acggccaagg cggcgtgcca 180
ggtcgcccgg gcgcacggtg cggacaaggt ggtgctggcg gtcccgatcg gcccanacga 240
catcgtggcg aagattcgcc gggtacgccg atgatgtggt gtgtttggcg acgccggcgt 300
tgt   303

<210> 722
<211> 280
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<400> 722
ctctgggacc ggccacggtg ccnccggcgt tcccggacgt gctgcgccag gtgtccggcg 60
gccgcgtgca tggtgttccc ggatcggccg ctggccagag cccaccggtg aatctggcgc 120
ctggccgacc accgtgcgcc gtaggcttgc gatcgtgcag cgctggcgtg gccaggacga 180
gatcccgacg gattggggca gatgcgtgct caccatcggg gtatttgacg gcgtgcaccg 240
cgggcacgcc gaactgatcg cgcacgcggt caaaggcggc 280

<210> 723
<211> 333
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (45)
<223> a, t, c or g

<220>
<221> modified_base
<222> (64)
<223> a, t, c or g

<220>
<221> modified_base
<222> (130)
<223> a, t, c or g

<220>
<221> modified_base
<222> (146)
<223> a, t, c or g

<220>
<221> modified_base
<222> (205)
<223> a, t, c or g

<220>
<221> modified_base
<222> (211)
<223> a, t, c or g

<220>
<221> modified_base
<222> (271)
<223> a, t, c or g

<220>
<221> modified_base
<222> (309)
<223> a, t, c or g

<400> 723
aatactcaag ctttcgtcag ttcattgcgc cagcagacca acaanagcat cgggacatac 60
ggantcaact acccggccaa cggtgatttc ttggccgccg ctgacggcgc gaacgacgcc 120
agcgaccacn ttcagcaaat ggccancgcg tgccgggcca cgaggttggt gctcggcggc 180
tactcccagg gtgcggccgt gatcnacatc ntcaccgccg caccactgcc cggcctcggg 240
ttcacgcagc cgttgccgcc cgcagcggac natcacatcg ccgcgatcgc cctgttcggg 300
aatccctcng gccgcgctgg cgggctgatt aac 333

<210> 724
<211> 320
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<400> 724
tgccgcggat ttggctggct gcccaatatt cagaatcggg cctttctttt tgcgcgacaa 60
taaggtcaca gtaaaccctc gttttgtgag atgcggggcg ggccgggcga antcgacctc 120
gagtgaatgg atctcgagtg aatggacagg gcatcgccta cgagtcgcat ccccatccaa 180
cagaccggtg ctcttgcatc ggaccctgaa ggtcccgcac ggagggtgtg gttgccggcg 240
cggggtcacg gtgcggtagc gacgtagtgt ttgaacgaat ttcttgatgc tccaacctgt 300
ttggtgttca atccagttct 320

<210> 725
<211> 296
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (3)
<223> a, t, c or g

<220>
<221> modified_base
<222> (24)
<223> a, t, c or g

<220>
<221> modified_base
<222> (58)
<223> a, t, c or g

<220>
<221> modified_base
<222> (60)
<223> a, t, c or g

<220>
<221> modified_base
<222> (77)
<223> a, t, c or g

<220>
<221> modified_base
<222> (219)
<223> a, t, c or g

<220>
<221> modified_base
<222> (229)
<223> a, t, c or g

<400> 725
aancttgcgc gctcggccgg gtcnagcatc cagctgctcg gcaaggaggc cagctacncn 60
tcgctgcgta tgcccagcgg tgagatccgc cgggtcnacg tccgctgccg cgcgaccgtc 120
ggcgaagtgg gcaatgccga gcaggcaaac atcaactggg gcaaggccgg tcggatgcgg 180

```
tggaagggca agcgcccgtc ggtccggggc gtggtgatna acccggtcna ccacccgcac 240
ggcggtggtg agggtaaaac ctccggcggc cgtcacccgg ttagcccgtg gggcaa      296
```

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<210> 726
<211> 304
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<400> 726
antcgaaagt gaccatctct accttgagtg ccataccgcc cgaccctatg cctcggatag 60
ctcggcggaa agaaacgctt gcagtgccgc cgaataggcg gctacgtcgt gagcgcccat 120
caactctcgc gcggagtgca tcgccagctg ggcggcgccg acgtcgaccg tggggattcc 180
ggtgcgcgcc gcggccaacg gcccgatcgt cgacccgcac ggcagatcgg cgcgatgttc 240
gtaacgctgc ataggcactc ccgcgcgctg gcaggccagt gcgaacgccg ccgcggtgcg 300
tccg                                                            304
```

```
<210> 727
<211> 318
<212> PRT
<213> Mycobacterium sp.

<400> 727
Pro Thr Gln Thr Leu Thr Gly Arg Pro Leu Ile Gly Asn Gly Thr Pro
 1               5                  10                  15

Gly Ala Val Gly Ser Gly Ala Thr Gly Ala Pro Gly Gly Trp Leu Leu
            20                  25                  30

Gly Asp Gly Gly Ala Gly Gly Ser Gly Ala Ala Gly Ser Gly Ala Pro
        35                  40                  45

Gly Gly Ala Gly Gly Ala Ala Gly Leu Trp Gly Thr Gly Gly Ala Gly
    50                  55                  60

Gly Ala Gly Gly Ser Ser Ala Gly Gly Gly Ala Gly Gly Ala Gly
65                  70                  75                  80

Gly Ala Gly Gly Trp Leu Leu Gly Asp Gly Gly Ala Gly Gly Ile Gly
                85                  90                  95

Gly Ala Ser Thr Val Leu Gly Gly Thr Gly Gly Gly Gly Val Gly
                100                 105                 110

Gly Leu Trp Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Thr Gly Leu
        115                 120                 125

Val Gly Gly Asp Gly Gly Ala Gly Gly Ala Gly Gly Thr Gly Gly Leu
    130                 135                 140

Leu Ala Gly Leu Ile Gly Ala Gly Gly Gly His Gly Gly Thr Gly Gly
145                 150                 155                 160

Leu Ser Thr Asn Gly Asp Gly Gly Val Gly Gly Ala Gly Gly Asn Ala
                165                 170                 175

Gly Met Leu Ala Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Asp Gly
```

```
              180                    185                      190
Glu Asn Leu Asp Thr Gly Gly Asp Gly Gly Ala Gly Gly Ser Ala Gly
        195             200             205
Leu Leu Phe Gly Ser Gly Gly Ala Gly Gly Ala Gly Gly Phe Gly Phe
        210             215             220
Leu Gly Gly Asp Gly Gly Ala Gly Gly Asn Ala Gly Leu Leu Leu Ser
225             230             235             240
Ser Gly Gly Ala Gly Gly Phe Gly Gly Phe Gly Thr Ala Gly Gly Val
            245             250             255
Gly Gly Ala Gly Gly Asn Ala Gly Trp Leu Gly Phe Gly Gly Ala Gly
            260             265             270
Gly Val Gly Gly Ser Ala Gly Leu Ile Gly Thr Gly Gly Asn Gly Gly
            275             280             285
Asn Gly Gly Thr Gly Ala Asn Ala Gly Ser Pro Gly Thr Gly Gly Ala
    290             295             300
Gly Gly Leu Leu Leu Gly Gln Asn Gly Leu Asn Gly Leu Pro
305             310             315
```

<210> 728
<211> 334
<212> PRT
<213> Mycobacterium sp.

<400> 728

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Pro Thr Gln Thr Leu Thr Gly Arg Pro Leu Ile Gly Asn Gly Thr Pro
  1               5                   10                  15
Gly Ala Val Gly Ser Gly Ala Thr Gly Ala Pro Gly Gly Trp Leu Leu
            20                  25                  30
Gly Asp Gly Gly Ala Gly Gly Ser Gly Ala Ala Gly Ser Gly Ala Pro
            35                  40                  45
Gly Gly Ala Gly Gly Ala Ala Gly Leu Trp Gly Thr Gly Gly Ala Gly
    50                  55                  60
Gly Ile Gly Gly Ala Ser Thr Val Leu Gly Gly Thr Gly Gly Gly Gly
 65                  70                  75                  80
Gly Val Gly Gly Leu Trp Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly
                85                  90                  95
Thr Gly Leu Val Gly Gly Asp Gly Gly Ala Gly Gly Ala Gly Gly Thr
            100             105             110
Gly Gly Leu Leu Ala Gly Leu Ile Gly Ala Gly Gly Gly His Gly Gly
        115             120             125
Thr Gly Gly Leu Ser Thr Asn Gly Asp Gly Gly Val Gly Gly Ala Gly
    130             135             140
Gly Asn Ala Gly Met Leu Ala Gly Pro Gly Gly Ala Gly Gly Ala Gly
145             150             155             160
```

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Gly Asp Gly Glu Asn Leu Asp Thr Gly Gly Asp Gly Gly Ala Gly Gly
            165              170              175

Ser Ala Gly Leu Leu Phe Gly Ser Gly Gly Ala Gly Gly Ala Gly Gly
            180              185              190

Phe Gly Phe Leu Gly Gly Asp Gly Gly Ala Gly Gly Asn Ala Gly Leu
            195              200              205

Leu Leu Ser Ser Gly Gly Ala Gly Gly Phe Gly Gly Phe Gly Thr Ala
    210              215              220

Gly Gly Val Gly Gly Ala Gly Gly Asn Ala Gly Trp Leu Gly Phe Gly
225              230              235              240

Ala Gly Gly Ile Gly Gly Ile Gly Gly Asn Ala Asn Gly Gly Ala Gly
            245              250              255

Gly Asn Gly Gly Thr Gly Gly Gln Leu Trp Gly Ser Gly Gly Ala Gly
            260              265              270

Val Glu Gly Gly Ala Ala Leu Ser Val Gly Asp Thr Gly Gly Ala Gly
            275              280              285

Gly Val Gly Gly Ser Ala Gly Leu Ile Gly Thr Gly Gly Asn Gly Gly
    290              295              300

Asn Gly Gly Thr Gly Ala Asn Ala Gly Ser Pro Gly Thr Gly Gly Ala
305              310              315              320

Gly Gly Leu Leu Leu Gly Gln Asn Gly Leu Asn Gly Leu Pro
            325              330
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<210> 729
<211> 650
<212> DNA
<213> Mycobacterium sp.

<400> 729

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gcggccgcaa ggggttcgcg tcagcgggtg ttggcgggtg tcggggctgg cttaactatg 60
cggcatcaga gcagattgta ctgagagtgc accatatgcg gtgtgaaata ccgcacagat 120
gcgtaaggag aaaataccgc atcaggcgcc attcgccatt caggctgcgc aactgttggg 180
aagggcgatc ggtgcgggcc tcttcgctat tacgccagct ggcgaaaggg ggatgtgctg 240
caaggcgatt aagttgggta acgccagggt tttcccagtc acgacgttgt aaaacgacgg 300
ccagtgaatt gtaatacgac tcactatagg gcgaattcga gctcggtacc cggggatcct 360
ctagagtcga cctgcaggca tgcaagcttg agtattctat agtgtcacct aaatagcttg 420
gcgtaatcat ggtcatagct gtttcctgtg tgaaattgtt atccgctcac aattccacac 480
aacatacgag ccggaagcat aaagtgtaaa gcctggggtg cctaatgagt gagctaactc 540
acattaattg cgttgcgctc actgcccgct ttccagtcgg gaaacctgtc gtgccagctg 600
cattaatgaa tcggccaacg cgaacccctt gcggccgccc gggccgtcga           650
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<210> 730
<211> 8
<212> PRT
<213> Mycobacterium sp.

<220>
<221> MOD_RES
<222> (2)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (4)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (7)
<223> Any amino acid

<400> 730
Asn Xaa Gly Xaa Gly Asn Xaa Gly
 1   5

<210> 731
<211> 9
<212> PRT
<213> Mycobacterium sp.

<220>
<221> MOD_RES
<222> (2)..(3)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (7)..(8)
<223> Any amino acid

<400> 731
Gly Xaa Xaa Ser Val Pro Xaa Xaa Trp
 1   5

<210> 732
<211> 29
<212> PRT
<213> Mycobacterium sp.

<400> 732
Gly Gly Ala Gly Gly Ala Gly Gly Ser Ser Ala Gly Gly Gly Gly Ala
 1   5   10   15

Gly Gly Ala Gly Gly Ala Gly Gly Trp Leu Leu Gly Asp
                20   25

<210> 733
<211> 45
<212> PRT
<213> Mycobacterium sp.

<400> 733
Gly Ala Gly Gly Ile Gly Gly Ile Gly Gly Asn Ala Asn Gly Gly Ala
 1   5   10   15

Gly Gly Asn Gly Gly Thr Gly Gly Gln Leu Trp Gly Ser Gly Gly Ala
                20   25   30

Gly Val Glu Gly Gly Ala Ala Leu Ser Val Gly Asp Thr
                35   40   45

<210> 734
<211> 21
<212> DNA
<213> Mycobacterium sp.

<400> 734
agttagctca ctcattaggc a   21

<210> 735
<211> 21
<212> DNA
<213> Mycobacterium sp.

<400> 735
ggatgtgctg caaggcgatt a   21

<210> 736
<211> 27
<212> DNA
<213> Mycobacterium sp.

<400> 736
aaacagctat gaccatgatt acgccaa   27

<210> 737
<211> 24
<212> DNA
<213> Mycobacterium sp.

<400> 737
tcctctagag tcgacctgca ggca   24

<210> 738
<211> 18
<212> DNA
<213> Mycobacterium sp.

<220>
<221> modified_base
<222> (7)..(12)
<223> a, t, c or g

<400> 738
tctagannnn nntccggc   18

<210> 739
<211> 18
<212> DNA
<213> Mycobacterium sp.

<220>
<221> modified_base
<222> (7)..(12)
<223> a, t, c or g

<400> 739
tctagannnn nngggccc   18

<210> 740
<211> 20
<212> DNA
<213> Mycobacterium sp.

<220>
<221> modified_base
<222> (9)..(13)
<223> a, t, c or g

<400> 740
cgtttaaann nnnwaggccg   20

<210> 741
<211> 21
<212> DNA
<213> Mycobacterium sp.

<220>
<221> modified_base
<222> (10)..(14)
<223> a, t, c or g

<400> 741
ggtactagtn nnnwtccgg c   21

<210> 742
<211> 22
<212> DNA
<213> Mycobacterium sp.

<400> 742
acgacctcat attccgaatc cc   22

<210> 743
<211> 23
<212> DNA
<213> Mycobacterium sp.

<400> 743
gcatctgttg agtacgcact tcc   23